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MOTOR AGE

BUICK, PERFECT SCORE, WINS SENTINEL CUP

MILWAUKEE, WIS., July 25—A model 19 Buick, this year's type, entered by the Hokanson Automobile Co., Madison, Wis., and driven by Emil Hokanson, won the Milwaukee Sentinel trophy, in the first annual state reliability tour conducted by the Wisconsin State Automobile Association, July 18 to 23, inclusive. Finishing the route without penalty, coming through the clutch, brake and motor tests without demerits, the Buick passed through the technical examination with a clean record, the only one of the twenty-four cars contesting in the tour to be marked perfect at the end of all the tests. The Pope-Hartford, a model T, 1910, was awarded second place. It made a good run, going over the course and through the tests with its fan belt off. A model G Franklin of 18 horsepower, the only air-cooled car in the tour, took third place. Four demerits in the brake test and two in the final examination constituted its total penalty of 6 points.

At the end of the 6 days' run on Saturday afternoon, July 23, eight of the twenty-four original starters held perfect road scores. These were the two Buicks, the two D-10 Kissels, the Pope-Hartford, the Reo, the Franklin and the Overland. In the brake test No. 9, Buick, incurred seven points, which was increased to fourteen in the technical examination. Both Kissels received demerits in both tests. The Pope-Hartford went through clean until the final test. The Reo got 8 points in the brake test and a further penalty of 11 in the final. The Overland also stood up until the final, in which it was assessed its total penalty of 16 points. Buick No. 8 was scored over and over in a search for faults, but when this was found impossible, the car stood out as undisputed winner of the $1,000 trophy. No protests were made against its victory.

It is a matter of encouragement to the officials of the tour that no protests were

MILWAUKEE RESULTS

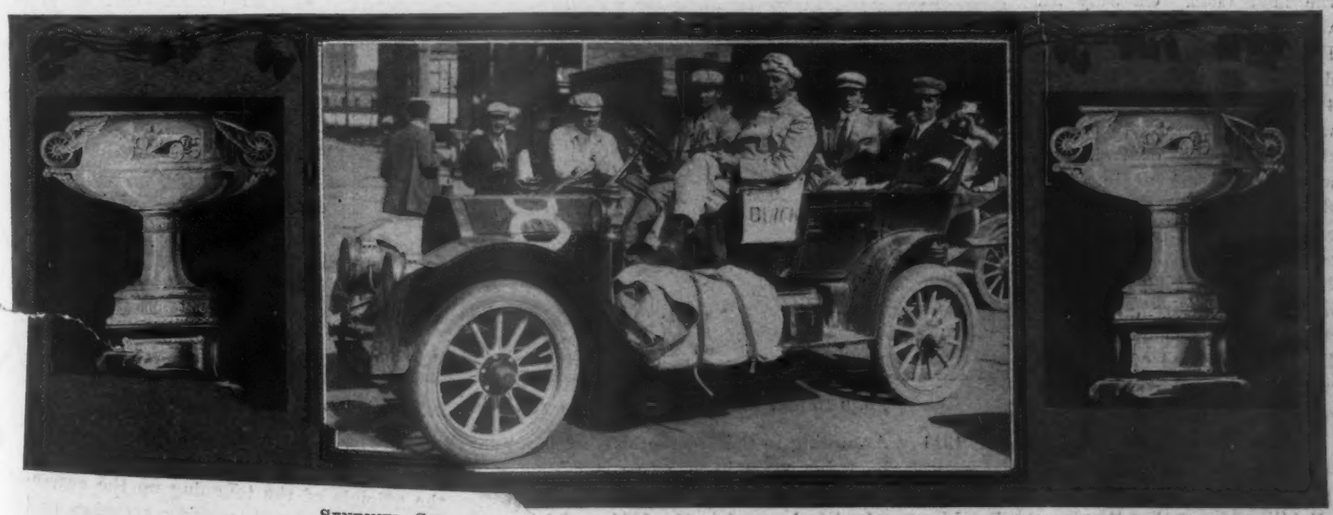
No. 8—Buick	0
No. 17—Pope-Hartford	3
No. 21—Franklin	6
No. 20—Ford	9
No. 9—Buick	14
No. 2—Rambler	16
No. 22—Overland	16
No. 18—Reo	19
No. 7—Jackson	31
No. 11—Kisselkar	34
No. 10—Kisselkar	35
No. 24—Petrel	38
No. 15—Johnson	42
No. 12—Kisselkar	52
No. 14—Pierce-Racine	53
No. 5—Mitchell	57
No. 19—Corbin	106
No. 4—Badger	142
No. 26—Marion	204
No. 6—Cadillac	422
No. 16—Ohio	488
No. 3—Badger	648

PERFECT ROAD SCORES

No. 8	Buick
No. 17	Pope-Hartford
No. 21	Franklin
No. 9	Buick
No. 22	Overland
No. 18	Reo
No. 11	Kisselkar
No. 10	Kisselkar

FINAL EXAMINATION

No. 8—Buick	0
No. 2—Rambler	0
No. 20—Ford	0
No. 6—Marion	0
No. 5—Mitchell	1
No. 21—Franklin	2
No. 10—Kisselkar	2
No. 17—Pope-Hartford	3



Sentinel Cup and the Buick Car That Won It With Perfect Score



SPOONER, No. 8 BUICK MUELLER, FRANKLIN HEWITT, BUICK HEBER, OVERLAND

made either before, during or after the run. This was due to the conscientious efforts made by entrants and drivers, as well as of the officials.

Every car in at the finish passed the clutch test perfect, and only two were penalized in the motor test. These were No. 6, Cadillac, and No. 7, Jackson. The Jackson had been running on three and then two cylinders for more than 2 days; the Cadillac, when only 30 miles from the finish, burned out a connecting rod bearing, and the driver took out the piston and connecting rod and drove home on three cylinders. Two cars did not officially finish the entire tour and final tests. The Staver-Chicago was laid up at Elroy, Wis., with differential trouble on the afternoon of July 19 and withdrew on July 20, continuing as a non-contestant, after repairs had been made with parts rushed to La-Crosse from Chicago.

No. 1 Rambler, the only 1911 model in the tour, withdrew as it finished the road test, not caring to go through the final tests. On July 21, when 5 miles from Chippewa Falls, the left rear wheel dropped off. After a delay of 4 hours the car proceeded, but when only 2 miles from Merrill, the night control, the wheel came off again. The studs holding the spare wheel on sheared off. The day's penalty was 1,542. On July 22, after checking out, the wheel was repaired, and this cost another 268 points. Withdrawal at the end of the road run made an additional 1,000 points, a total of 2,813.

The Rambler was the first of the 1911 models to leave the factory. Ted Collier, chief tester, preferred to test it out in the reliability tour rather than on the Rambler track, and he found the car's weakness.



POPE-HARTFORD, WINNER OF SECOND PLACE



FRANKLIN, WHICH HAD PERFECT ROAD SCORE



No. 9 BUICK, WHICH WAS CLEAN ON THE ROAD

According to Collier, the hub bolts had not been increased in size to correspond with the increased weight of frame and heavier wheel to be used in the 1911 models. Consequently the strain sheared off the bolts.

The little Ford made a remarkably good run. W. H. Diener, its pilot, took the best of care of the car, using his time liberally instead of beating it, and every observer who had the good fortune to ride in it congratulated Mr. Diener and himself on the excellence of the performance. It passed a perfect technical, brake, motor and clutch test.

W. L. McEldowney, of West Salem, who entered and drove his model 59 Jackson, which he received only 3 weeks before the start, was the only private owner to contest. Mr. McEldowney made the run for the sake of the sport, and he was perfectly satisfied with the showing his car made.

George Browne, the comedian of the tour, who piloted the Marion Bob Cat, was responsible for one thing that made the tour one of much more pleasure than otherwise would have been the case. In a spirit of joking Mr. Browne organized the 60-Cent Club while the tourists were awaiting announcement of penalties in the Commercial club house at Eau Claire. Out of placards and scrap paper he fashioned cute badges and enrolled any member who had 60 cents. It was thrown into the treasury, and a tour of the city was made. By the time Merrill was reached the members were known by badges of silk ribbon, elaborately printed. Another assessment was levied to cover the badges At Appleton another kind of badge was issued for the modicum of silver, to cover a banquet to be held at the end of the run in Milwaukee. The banquet was held in the Hotel Pfister on Saturday night, and proved one of the most enjoyable features of the entire affair. All of the officials of the tour dug up the assessment and attended, making speeches and



WILKINS, REO W. R. RICE, KISSEL W. C. RICE, KISSEL DIENER, FORD

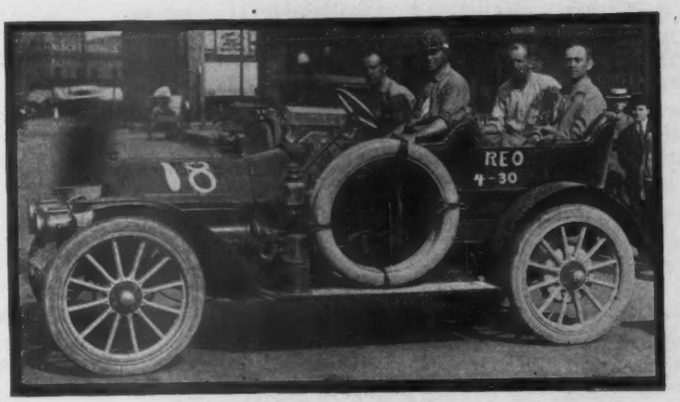
addresses. The 60-Cent Club probably will live until the next annual tour. It promises to be a feature each year.

The first and only rain that actually fell on the tourists came on the fourth day, during the run from Eau Claire to Merrill. At Owen, the noon control, where 1½ hours were spent, a light rain started to fall just as the men sat down to dinner. Tarpaulins were hauled out, but just as they had been securely tied the clouds broke and the rain stopped.

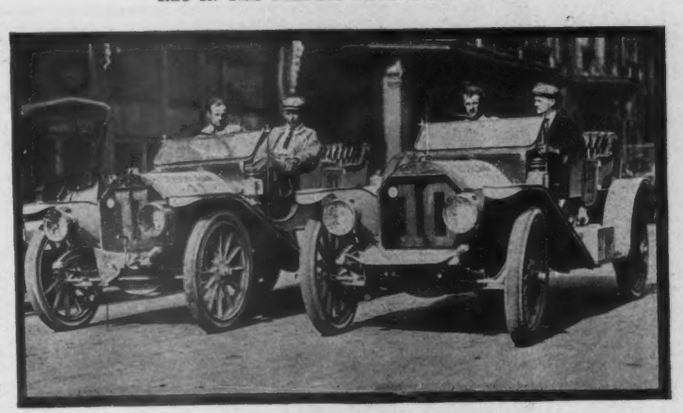
The path led through the great forests of northern Wisconsin, and ended in the midst of the greatest wood country in Wisconsin, Merrill. After Chippewa Falls was passed and a northerly direction taken, the smoke from forest fires became dense, and added to the dust caused severe burning sensations in the optics. At times the fires were within 5 miles of the road. The tourists passed through a wild country, through Cadott, Boyd, Stanley, Thorp and Owen. No public reception was given, but the natives were truly glad. The slight rainfall at Owen did little or nothing to lay the dust. In the afternoon the procession passed through Curtiss, Abbotsford, Athens, and entered Merrill, where, under the leadership of A. H. Stange, the father of the city, and State Senator James A. Wright, a noisy reception was given. Every car in the city assembled at the Badger hotel, the checking point, and every signal sounded in welcome. The town of Heinemann, 14 miles away, had been totally destroyed during the night before, and some of the tourists made side-trips to the scene. In the evening there was a band concert in the parked public square, and later all gathered in Hackley hall, where Messrs. Stange and Wright had set 'em up for the boys. It was a great jollification, for Merrill was enthusiastically wild over the fact that it was chosen as the night control over Wausau, a larger and more important city. Merrill has many members in the Wisconsin Valley Automobile Club, members of the W. S. A. A., and all helped in the entertainment.



OVERLAND, WHICH WENT CLEAN ON THE ROAD



REO IN THE PERFECT ROAD SCORE CLASS



TWO KISSELKARS WHICH PERFORMED CREDITABLY

The fifth day's run, starting at Merrill at 7 o'clock, was a revelation to the tourists. The route led through the largest and most substantial cities in central Wisconsin. An 18-mile run to Wausau, where a gasoline station had been established in lieu of a night control, which Merrill fortunately won over Wausau, was made in a short time, all reports of "bad highways through an almost virgin forest" being declared false. If Wausau was angry over losing the night control honor, it was not apparent. Free lemonade, lunch and cigars were consumed in huge quantities, although breakfast was only an hour behind.

From Wausau to Stevens' Point, Amherst, and numerous small cities the roads were good, showing evidences of careful planning in improvement work. At Waupaca there was a 1½-hour noon control, and this respite over, the route to Appleton was resumed. It was the height of pleasure for the tourists to sit back, go over the fine roads without being jolted to bruises, enjoy the grand scenery, see some real farms on level or rolling ground, and take it easy generally.

Appleton, the night control, threw her key into the river and bade the tourists welcome. There was no formal entertainment, but every member of the Outagamie County Automobile Club, wearing bright badges, made himself a committee of one on entertainment. Dr. J. J. Canavan, mayor of Appleton, led the festivities. A band played in the public square in the evening.



SCENES AT MILWAUKEE DURING BRAKE AND CLUTCH TESTS

MILWAUKEE PENALTIES

Following is the list of penalties imposed on the different cars in the technical inspection:

Car No. 1, Rambler—Withdrawn.

Car No. 2, Rambler—Perfect.

Car No. 3, Badger—Rear axle truss rod lost, 10; right rear forward spring clip lost, 1; left front steering knuckle bearing pin loose, 5; right front steering knuckle bearing pin loose, 5; total, 21.

Car No. 4, Badger—Two cap screws lost in cover on clutch casing, 2; right front wheel spindle bearing loose, 5; left front wheel spindle bearing loose, 5; total, 12.

Car No. 5, Mitchell—Steering square loose on radius arm, 1; total, 1.

Car No. 6, Cadillac—One piston and connecting rod taken out of second cylinder, 240; Delco ignition coil loose and front bracket gone, 5; water leak, third cylinder, 1; two water connections to second cylinder plug, 5; left front lamp bracket bent, 1; total, 256.

Car No. 7, Jackson—Ignition control defective, 5; lock nut loose, left radius rod, 1; two cylinders missing, 10; right front wheel bearing loose, 5; left front wheel bearing loose, 5; total, 26.

Car No. 8, Buick—Perfect.

Car No. 9, Buick—Nut lost, radiator stud, 2; right front fender broken at apron, 5; total, 7.

Car No. 10, Kissel—Right rear spring grease cup lost, 2; total, 2.

Car No. 11, Kissel—Hand throttle control inoperative, 8; total, 8.

Car No. 12, Kissel—Three bolts loose in steering gear housing, 3; square end on steering radius arm loose, 1; grease cup lost, left rear spring, 2; leaf broken, right front spring, 5; total, 11.

It was one of the events of the year for Appleton, just as it was to all cities along the route.

The last day's run took the tourists over the finest route of any encountered during the 6 days. The distance of 158 miles from Appleton to Milwaukee was covered in record time. There are no finer roads in Wisconsin, taken as a whole, than along this route. There is a reason for it. This is the oldest territory in Wisconsin—where the first business was done, the first cities built, and the country developed. There are many large cities, and they are close together.

It was a short dash from Appleton to Neenah-Menasha, the big paper mill cities built in twinship. The bad roads encountered here were fine compared with some the tourists traveled earlier in the week. From the Twin Cities to Oshkosh and then Fond du Lac along the shores of beautiful to Lake Winnebago, the largest inland lake of this state, the roads were splendid. At Fond du Lac the heavy rainfall of the night before showed its effect, but the mud was relished, for the cars had not seen mud since starting. At Waupun, the state prison city, a stop of 15 minutes for gasoline was made, and the dash was resumed. At Oshkosh, Strang's Pierce-Racine had already caught the Peerless pacemaker, which let itself out because it was the last day of the tour and the boys were anxious to get home. From then on six to eight cars were bunched behind the pacemaker at all times, and a merry party resulted. For miles, with no teams in sight, the cars ran two and three in a tier, exchanging compliments and other things. From Beaver Dam to Columbus, the home of the Badger Motor Car Co., the pace was fast, for the Badger had given fair warning of a nice feed. This was put away in 5 minutes.

From Beaver Dam to Milwaukee there was no trace of the rain, and the dust at times was blinding, as the cars were well bunched. Outside of Columbus the leading cars encountered Charles F. Pfister, proprietor of the Milwaukee Sentinel, which donated the trophy, in his big Lozier touring car, containing Chief of Police Janssen, of Milwaukee, John Poppendieck, Jr., editor-in-chief, and R. Claude Ellis, city editor of the Sentinel. Mr. Pfister's appearance was hailed with a great shout, and the man who made the tour possible took the honors with due dignity and grace. It happened that the Peerless pacemaker made a stop for tire change just as the Pfister Lozier hove into sight, giving good time for the exchange of compliments.

At Watertown ½-hour stop for supplies was made. In anticipation of rain, the contest board started the tour at 7 o'clock, but as every car was far ahead of schedule, the orignal 15-minute stop at Watertown was doubled. The town was elaborately decorated and a band paraded Main street for an hour.

The path from Watertown to Oconomowoc and thence to Milwaukee was like a boulevard. The roads are of macadam, of a smoothness resembling asphalt. The first

MILWAUKEE BRAKE TESTS

	Foot Brake. Feet.	Hand Brake. Feet.
No. 2, Rambler	62	52
No. 3, Badger	42	72
No. 4, Badger	94	58
No. 5, Mitchell	27	37
No. 6, Cadillac	44	96
No. 7, Jackson	31	54
No. 8, Buick	38	33
No. 9, Buick	45	57
No. 10, Kissel	44	83
No. 11, Kissel	47	76
No. 12, Kissel	71	67
No. 14, Pierce-Racine	43	83
No. 15, Johnson	31	30
No. 16, Ohio	62	48
No. 17, Pope-Hartford	31	40
No. 18, Reo	52	56
No. 19, Corbin	57	51
No. 20, Ford	31	43
No. 21, Franklin	43	54
No. 24, Petrel	38	50
No. 26, Marion	56	36



DIENER'S FORD WHICH MADE FINE SHOWING IN THE RUN

MILWAUKEE PENALTIES

Car No. 14, Pierce-Racine—Three bolts securing steering gear to frame loose, 3; tie rod between steering knuckles bent, 5; grease cup, right rear spring lost, 2; leaf clip, left front spring, loose, 1; total, 11.

Car No. 15, Johnson—Two water leaks, 2; right rear spring seating broken, 15; nut and spring on bonnet fastener lost, 2; total, 19.

Car No. 16, Ohio—One water leak, 1; cut-out disconnected, 1; adjustment plug of clutch case lost, 2; mud apron, right side, loose, four screws out, 4; right frame member cracked at center, 250; floor boards screw lost, 1; left front lamp bracket lost, 5; total, 265.

Car No. 17, Pope-Hartford—Fan belt off, 2; water leak at pump, 1; total, 3.

Car No. 18, Reo—Square end radius rod loose, 1; right rear fender cracked, due to crystallization, 2; left dash lamp bracket loose and sheet metal dash cracked, 8; total, 11.

Car No. 19, Corbin—Water leak, 1; two bonnet fasteners lost, 4; left rear spring clip broken, 15; left front spring broken, 30; total, 50.

Car No. 20, Ford—Perfect.

Car No. 21, Franklin—Left rear brake spring lost, 2; total, 2.

Car No. 22, Overland—Left brace rod to rear axle broken, 10; gasoline leak, 1; loose bolt in steering knuckle, left front wheel, 5; total, 16.

Car No. 23, Staver—Withdrawn.

Car No. 24, Petrel—Right rear brace bolt and spring lost, 2; right front steering knuckle bolt loose, 5; left front steering knuckle bolt lost, 5; total, 12.

Car No. 26, Marion—Perfect.



CROWD SEES FINISH OF SENTINEL CUP RUN

oiled roads were found in the city of Oconomowoc, which is one of the best known summer resorts in the west.

The entire route from Watertown to Milwaukee is in fine shape, because of the wise direction of efforts in highway improvement. It is one of the most-traveled routes in Wisconsin.

When the leaders struck the pavement at the western city limits of Milwaukee they were met by a great crowd. The route down Grand avenue to the Hotel Pfister was lined with people, who cheered and were cheered. The dusty machines, laden with khaki-clad tourists, made it appear that some army had suddenly taken to motor cars. In the downtown districts progress was impeded by the great crowds, but finally the cars reached the checking-in station at the Hotel Pfister, where they had checked out on Monday morning, and it was here that the real demonstration was made.

From the Hotel Pfister the cars were sent away to Fourth and Cedar streets, where the brake, clutch and motor tests were made. These completed, all were sent into the auditorium, where David Beecroft, the technical committee chairman, spent many hours in hard labor over the twenty-two cars that remained in the contest for the trophy.

Formal presentation of the Milwaukee Sentinel trophy to the Buick, winner of the first annual Wisconsin reliability tour, will take place at an invitation gathering in the Hotel Pfister Thursday evening. The officials of the association will entertain all participants in the tour. On Saturday evening there will be a grand Buick demonstration in Milwaukee. Every Buick owner has been invited to attend.

FULL REPORT OF THE PENALIZATIONS IMPOSED IN MILWAUKEE SENTINEL CUP RELIABILITY RUN

No.	Model Car	Pas-sengers	Entrant	Driver and Alternates	Road Score	Brakes	Motor	Clutch	Technical	Total
8	1910 19 Buick	4	Hokanson Auto Co., Madison, Wis.	Emil Hokanson	0	0	0	0	0	0
17	1910 T Pope-Hartford	4	Emil Estberg, Milwaukee	Emil Estberg	0	0	0	0	3	3
				F. L. Buckbee						
21	1910 G Franklin	5	Franklin Auto-Supply Co., Milwaukee	L. M. Springer	0	4	0	0	2	6
20	1910 T Ford	2	Hickman-Lawson-Diener Co., Milwaukee	W. H. Diener	9	0	0	0	0	9
				I. G. Hickman						
9	1910 17 Buick	4	Buick Motor Car Co., Milwaukee	G. P. Hewitt	0	7	0	0	7	14
				William Fisher						
				Dominic Nicolai						
				Robt. Haem						
				N. J. Munson						
2	1910 53 Rambler	2	Rambler Garage Co., Milwaukee	Arthur Gardiner	2	14	0	0	0	16
22	1910 42 Overland	5	Bates-Odenbrett Co., Milwaukee	John Heber	0	0	0	0	16	16
				Chas. Johnson						
				Geo. Browne						
				John Goergen						
18	1910 S Reo	4	Curtis Auto Co., Milwaukee	Geo. Thomas	0	8	0	0	11	19
7	1910 59 Jackson	4	W. L. McEldowney, West Salem, Wis.	W. L. McEldowney	1	4	0	10	16	31
				J. E. Zimmer						
				P. D. Bentley						
11	1910 D Kisselkar	4	Kissel Motor Car Co., Hartford, Wis.	W. R. Rice	0	26	0	0	8	34
10	1910 D Kisselkar	4	Kissel Motor Car Co., Hartford, Wis.	W. C. Rice	0	33	0	0	2	35
24	1910 F Petrel	5	Petrel Motor Car Co., Milwaukee	J. D. White	26	0	0	0	12	38
15	1910 Spl Johnson	4	Johnson Service Co., Milwaukee	J. W. Eviston	23	0	0	0	19	42
				Herbert Marsden						
12	1910 D L Kisselkar	2	Kissel Motor Car Co., Hartford, Wis.	Arthur Ove	3	38	0	0	11	52
14	1910 K Pierce-Racine	5	Morrison Motor Car Co., Milwaukee	Lewis Strang	9	33	0	0	11	53
5	1910 T Mitchell	4	Mitchell Auto Co., Milwaukee Agency	F. P. Wilkins	56	0	0	0	1	57
19	1910 A Corbin	4	Curtis Auto Co., Milwaukee	Gordon Bird	43	8	0	0	55	106
4	1910 B Badger	5	Badger Motor Car Co., Columbus, Wis.	Dan Arbogast	78	52	0	0	12	142
26	Marion	2	G. W. Browne	G. W. Browne	196	6	0	0	0	204
6	1910 30 Cadillac	4	Jonas Auto Co., Milwaukee	Aug. A. Jonas	115	46	0	5	256	422
				Louis Fuhrman						
16	1910 40-A Ohio	5	J. I. Case Plow Works, Racine, Wis.	Ross Henwood	211	12	0	0	265	488
				H. M. Wallis, Jr.						
3	1910 B Badger	5	Badger Motor Car Co., Columbus, Wis.	E. W. Arbogast	605	22	0	0	21	648
				Carl Kobersteen						
1	1911 64 Rambler	5	Rambler Garage Co., Milwaukee	Edward Collier	2613	Withdrawn				2613
23	1910 H Staver	5	Stephenson Motor Car Co., Milwaukee	Albert Buis	1000	Withdrawn				
				Chester Cheney						

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Who Made the Banks Dictators?

IT has been constantly rumored for several months—in fact, for more than a year—that a period of business depression is at hand, and since the certainty of this was made known it has been the duty of not a few of the financiers to decide just what has been the cause of this probable stringency, whether such diagnosis be correct or not. The motor car most naturally has been selected as a conspicuous target for much of this criticism, and particularly so since the farmer has become so great a buyer of cars. To the extravagance, then, of the farmer is the financier ascribing the present calm that has started to settle over the industrial and business world. There must be a cause for every condition, and it is natural that since the drought throughout the big agricultural sections of this country has given just cause for a reduction in the crop totals of the year that the cause should be found in the farming sphere; and as the motor car has depleted the bank accounts of many farmers, it would appear that no better excuse could be trumped up than that the needless—so they say—outlay for the car has brought about the whole situation, even the drought and the dry, hot winds of the past month or 6 weeks.

IF every farmer throughout the states of Iowa, Nebraska, Kansas, Oklahoma, Texas and the Dakotas had a bank account large enough to pay cash for a $2,000 motor car, it is questionable if any bank has any right to criticise the fact that these farmers may draw on that account for the purchase of such a commodity. It is granted that every man has a right to dispose of his own savings in any legal manner that he may desire without any dictation as to whether it suits his bank or not. Bankers have not lodged any special objections should these same farmers withdraw heavily for a European tour, or for a high-priced piano or other home luxury. The farmer's funds are his own, and he has every right to invest them as he may desire if not in violation of the statutes of the land. It is a fact that practically eight times as much money is being expended each year for tobacco and liquor as is being invested in motor cars. We have not heard of any strenuous objections made by bankers because certain of their clients have adopted a better brand of havana or increased the number of his daily consumption. These bankers who are attacking the purchase of motor cars by the farmers have absolutely failed to unbiasedly compare the amounts of money being annually expended along other lines with that invested in cars, as well as to take due cognizance of the fact that the car is anything but a needless expense, but in the annual statement must be entered as an investment and given credit for its results.

IF bank presidents and cashiers are to criticise every so-called luxury or pleasure that to some extent depletes their deposits, it would perhaps be best for congress to make them guardians of the public funds and permit them, as some do at present, to invest their deposits in most questionable enterprises. But the banks have considered until recently many of the motor car factories exceptionally good risks, and no one has been more desirous of getting a share of the big annual dividends of car factories than the watchful bank officials. It has only been since the farmer has become a big factor in the arena that the bankers have started criticising. One banker cites the fact that of forty-eight sales made, forty-two called for mortgages. A big percentage of people give mortgages when they buy pianos, even when buying them on the installment plan, but the motor car is a cash transaction. While one dealer reports the above condition, it is a fact that another states that in 5 consecutive years of car selling in the same territory he has not averaged three mortgages a year, and his annual sales have been close to 120 cars.

THE bankers and other officials who have so recently criticised the public for investing in cars have in many cases greatly exaggerated the real facts of the case. They have in cases stated openly that 20,000 cars were owned in a certain state, and have added that the withdrawals from the banks in order to buy such had so depleted the bank deposits as to give reasons for feelings of unrest. As a matter of fact, in such states the total registration to date is not 10,000 cars, and all of these 10,000 cars have not been purchased in the last year, during which time all of the troublesome symptoms of financial unrest have been discovered. If the banker wants to blame the motor car for its share in the present expected stringency, let him be fair and not lay the trouble to people buying 20,000 cars, when as a fact scarcely half that number is owned in the state. It is easy to base judgment on hearsay, and it is more than likely that some of these would-be sages in the banking world have based their calculations on the announced product of different car makers as made 10 months ago. It will be remembered that at the start of the 1910 season 5,000, 7,000, 10,000, 15,000, 20,000 and even 40,000 outputs of cars were talked of, but today thousands of these have never been manufactured, so that the banker, if he be just, must base his conclusions on the cars actually sold and not on the announced output of scores of companies. It is a fact that one or two concerns have come from 5,000 to 10,000 short of the number of cars they hoped to build. There are many other factories which were not able to build within 800 or 1,500 of their planned output, all of which must be considered before a country-wide criticism of the dangers of the motor car is launched country wide.

THE motor car is today a big industrial factor, although not acknowledged as such by hundreds of the penny-wise-and-pound-foolish type of financiers. Any investment that adds to those rational pleasures of the people must not be counted as a useless luxury and a non-productive investment. The motor car is a most productive investment. It is making hundreds of farmers satisfied with their country homes throughout the big agricultural sections today who otherwise, owing to their recent successes, would have left their farms and moved into adjacent towns and cities. It is true that within the last 10 years in large areas in Iowa the farmer has rented his land and moved into the town, where he lives the role of the retired farmer; it is equally true that since the car has attracted the farmer that this city-ward movement has shown a decrease, thanks to the car; and it is further an acknowledged fact that this is a direct benefit to the sections concerned. In farming communities where the land is rented out the rents are high and the tenant must crop to the limit in order to pay his rent and his own looked-for remuneration. The land will stand this heavy cropping so long and no longer. Soil exhaustion of this nature is a danger to be feared, and if the motor car stems the tide a good state and national result has been accomplished.

CHALMERS NO. 5 AWARDED GLIDDEN TROPHY

NEW YORK, July 25—According to a decision made Thursday by the contest board of the American Automobile Association, No. 5 Chalmers, driven by William Bolger, is the winner of the Glidden trophy, the contest board sustaining the appeal of the Chalmers company from the decision of Referee Whiting at Chicago. Following this the case was carried to the courts and upon the filing of the complaint of Harold O. Smith, Justice William J. Kelly, of the supreme court of the state of New York, on Saturday granted a preliminary order of injunction enjoining and restraining the American Automobile Association and the members of its contest board from delivering, and the Chalmers Motor Co. and George W. Dunham from receiving, the Glidden trophy, upon the grounds that the members of the contest board, who reversed the decision of the referee awarding the trophy to H. O. Smith and awarded it to the Chalmers Motor Co. had acted without jurisdiction, wrongfully and illegally and in violation of the rules governing the contest for the trophy; had shown partiality in favor of the Chalmers company and had violated the terms of the trust imposed upon the association by the terms of the deed of gift of the trophy from Charles J. Glidden, the donor.

The announcement made by the contest board when it made its ruling is as follows:

"The appeal of the Chalmers Motor Co. is sustained. There was no evidence adduced before the contest board on this appeal, or before the referee or at the time the Premier entries were made or at the start of the 1910 Glidden tour, to prove that the auxiliary oil tank and pump equipment was stock equipment. The contest board finds that this auxiliary oil tank and pump equipment was not stock equipment under the rules.

"The Premier Motor Mfg. Co. failed to comply with rule 6 of the 1910 contest rules in not furnishing to the technical committee of the American Automobile Association, after repeated demands, from June 29 to July 21, 1910, during which period three of its members visited the Premier factory, evidence sufficient to establish the stock status of Premier cars Nos. 1 and 2 entered in the 1910 national reliability tour of the A. A. A. in respect to equipment of auxiliary oil tank and pump for injecting oil direct to the crankcase. The oiler equipment in question was a 1½-gallon oil tank located on the chassis under the tonenau plan, in conjunction with a hand pump for forcing the oil direct into the crankcase whenever necessary.

"The decision of the referee is reversed and Premier cars Nos. 1 and 2 are disqualified and the Glidden trophy awarded to the Chalmers Motor Co.'s entry No. 5."

Chairman Butler also announced today that other matters were decided at the meeting of the board last Thursday. The appeal of the General Motors Co. from a decision of the referee in disqualifying Buick roadsters entry No. 3 in the Brighton Beach 24 hours race, May 13 and 14, 1910, for violation of rule 249, which provides that "when one or more parts of an assembled unit are damaged, such damaged parts only may be replaced," was heard. The appeal was overruled and the decision of the referee sustained.

Smith and Premier Disqualified

New York, July 27—Special telegram—The contest board will present its side of the Premier-Chalmers case to the court on a motion to vacate the injunction mainly on the grounds that Smith, for the Premier company, by signing entry blanks agreed to recognize the jurisdiction and be bound by the decisions and rulings of the contest board. For the breach of contest rules in denying the jurisdiction of the contest board and appealing to the courts and causing publication in the public press of statements not in accordance with the facts, all of which is conduct prejudicial to the welfare of sport and industry, the contest board has disqualified H. O. Smith and the Premier Mfg. Co. from all A. A. A. sanctioned contests until further notice.

FIELD FOR BEACH MEET

Galveston, Tex., July 25—For the race meet on Galveston beach, August 3, 4 and 5, there have been the following entries, with other entries likely to be made before the races start: Simplex, Bertrand, Chadwick No. 1, Len Zengel; Chadwick No. 2, Johnson; Marmon, McNey; National No. 1, Sunden; National No. 2, J. W. Munn; National No. 3, no driver named; Stoddard-Daytons, No. 1, de Hymel; No. 2, no driver named; two Inter-States, three Marions, two Hudsons and a Chalmers 40, Lee Willis.

The Galveston Automobile Club, under whose auspices the carnival races will be run, has arranged for the entertainment of all visiting car owners, and reception committees have been appointed. Several formal functions probably will be held during the meet. The beach course is about 180 feet wide and is in the best of shape for the races. Experts pronounce it very fast. The course will be over a 5-mile straightaway for the longer races and over a 2½-mile straightaway for the shorter races. Races will be run from 1 mile up to and including a free-for-all 200-mile race. Cash purses aggregating $3,000 are up for the winners in the events. A grand stand seating 5,000 people has been erected, so that the spectators will have a good view of the races. For 2 miles near the grand stand the course will be fenced to keep spectators off.



September 5—Track meet at Wildwood, N. J.

September 5—Track meet at Cheyenne, Wyo.

September 5—Road race of Denver Motor Club, Denver, Colo.

September 5-10—Track meet at state fair, Minneapolis, Minn.

September 7-9—Four-day reliability run of Automobile Club of Buffalo.

September 9-10—Track meet at Providence, R. I.

September 10—Automobile Club of San Francisco road race, Golden Gate park.

September 10—Mount Baldy road race, Los Angeles, Cal.

September 10-11-12—Track meet at Seattle, Wash.

September 17—Track meet, Syracuse, N. Y.

September 18—Track meet at Syracuse, N. Y.

September 24—Santa Monica road race of Licensed Motor Car Dealers of Los Angeles, Cal.

October 1—Vanderbilt cup race.

October 3—Reliability run of Louisville Automobile Club, Louisville, Ky.

October 7-8—Speedway meet at Los Angeles, Cal.

October 6-7-8—Track meet at Santa Anna, Cal.

October 8—Fairmount Park road race, Philadelphia, Pa.

October 15-November 2—Show in Paris promoted by Aeronautical Society.

October 15-16-17-18—Annual 1,000-mile reliability run of Chicago Motor Club.

July 30—Track meet of North Wildwood Automobile Club, Wildwood, N. J.

July 30—Inaugural sweepstakes meet on Long Island motor parkway.

August 1—Reliability run of Minneapolis Automobile Club, Minneapolis, Minn.

August 1-September 15—French industrial vehicle trials.

August 6—Track meet of Quaker City Motor Club, of Philadelphia.

August 12—Annual hill-climb of Chicago Motor Club at Algonquin, Ill.

August 16-27—Munsey tour.

August 17—Track meet at Cheyenne, Wyo.

August 26-27—Road races of Chicago Motor Club at Elgin, Ill.

August 31-September 8—Reliability run of Automobile Club of Kansas City, Mo.

September 2-3-5—Speedway meet at Indianapolis.

September 3—Reliability run of North Wildwood Automobile Club, Wildwood, N. J.



October 20-21-22—Speedway meet at Atlanta, Ga.

October 23—Road race, Portola cup, San Francisco, Cal.

October 27-28-29—Track meet at Dallas, Tex.

November 5-6—Track meet at New Orleans, La.

November 6-9-13—Track meet at San Antonio, Tex.

November 24—Hill-climb at Redlands, Cal.

November 24—Road races at Savannah, Ga.

December 1-8—First annual aeronautical exhibition, Chicago Coliseum.

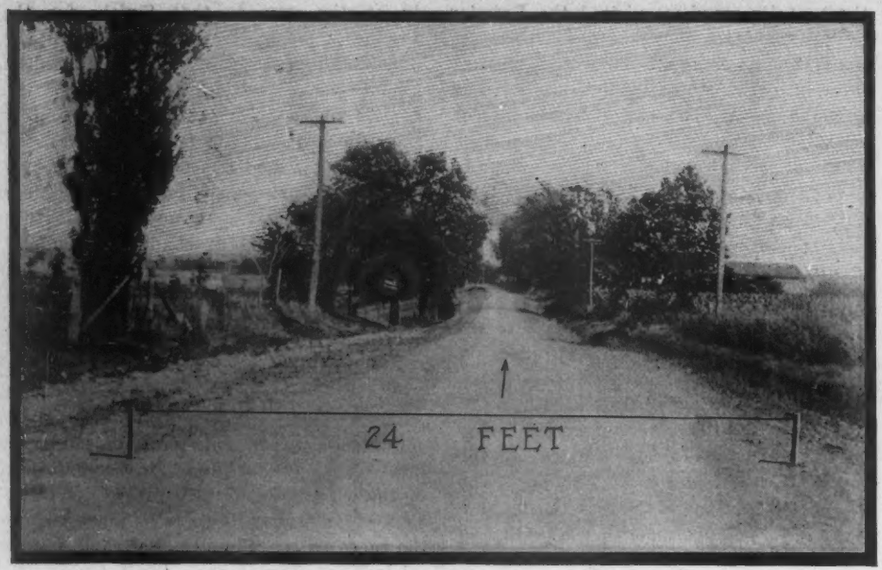
December 3-18—Annual salon of Automobile Club of France.

January 7-14 and 17-24, 1911—Show of A. L. A. M., Madison Square garden, New York.

February 6-11 and 13-20, 1911—N. A. A. M. show, Chicago.



Chicago Gets National Road Races



IMPROVED STRETCH OF ELGIN COURSE SHOWING WIDTH OF ROAD

CHICAGO, July 27.—The American Automobile Association has granted the request of the Chicago Motor Club and has made the road races scheduled at Elgin on August 26 and 27 national stock chassis events, which, of course, will add much to the prestige of this speed carnival, which is expected to rank with the Vanderbilt in importance. This is the plum that went to Lowell, Mass., last year and which in reality makes national road championships out of what otherwise would have been merely western contests.

Dickering for the national events has held up the entry blanks, but now that this decision has been arrived at the club will at once get out the blanks. It has made wonderful progress the past week in arranging the details of the races. It has secured all four trophies needed; it has deposited with Chairman Butler the $2,500, which is to be split up into cash prizes for the winning drivers, and it has hustled the contractors, so that it is expected the course will be completed inside the next 2 weeks. Besides this the Elgin Automobile Road Racing Association, co-partner with the club in the promotion of the events, has decided to offer popular prices, and with that end in view it has settled on a rate of $1 a car for parking spaces, $1.50 a person for box seats, $1 for grand stand seats and 50 cents a person for bleachers. In addition to this there will be an initial charge of 50 cents a person in order to get any place on the course. All the property owners are in on the deal, and as they share in the profits they will se to it that no one without a ticket can get near the course. The grand stand wil seat 4,420 persons, the boxes 552 and the bleachers 3,000. The rates above mentioned apply to each day.

The trophies, three of which have been donated by the Elgin National Watch Co., of Elgin, are valued at $7,500. The Elgin National trophy will be given for the big race on the second day, which is open to stock cars under 600 cubic inches. It is valued at $4,500. The Illinois trophy, valued at $1,500, is offered for the 301-450 race on the first day; the Kane County trophy, valued at $1,000, is up in the 231-300 class, and the Fox River Valley cup, valued at $750, is offered in the 161-230 class.

Another step taken has been to appoint Charles P. Root as general executive of the races, the same position as held by F. H. Trego last year at Crown Point. Mr. Root resigned as chairman of the contest board of the club to accept the new place, and succeeding him on the contest board is Harry T. Clinton, who has been named as chairman. The size of the committee has been increased from three to fifteen, with John G. De Long as secretary and C. E. Gregory as treasurer.

The contractors who have been working on the course have accomplished wonders and are making the road of an average width of 20 feet so there will be no trouble at all in passing. In many places the road is 24 feet in width and there will not be a rough spot on it when the work is completed.

Entries already are coming in. Arthur Greiner, the amateur, has put in a National in the Elgin National race, and the National Automobile Co., local agent, has named a car for the Illinois trophy. Today a telephone entry for two Cole cars for the Fox River Valley cup was made. It will be necessary to limit the size of the fields to twenty cars a day, so there is great haste to get in early.

BIG CHALMERS DIVIDEND

Detroit, Mich., July 27—Special telegram —At the annual meeting of the Chalmers Motor Co. a 30 per cent cash dividend was declared and the capital stock of the company increased from $300,000 to $3,000,000. The officials announced that the company's business was in the best possible condition, and gave out the following statement:

"The capital stock has been increased from $300,000 to $3,000,000. This does not mean the issuance of new stock for sale, as the entire stock dividend was divided pro rata to all the stockholders, the par value of the shares being raised from $10 to $100 each.

"When the Chalmers company originally was organized it occupied only a small plant, and it did not put out large numbers of cars. Furthermore, it was not doing much of its own manufacturing at the home plant, but was buying most of the parts outside and assembling them here. During the past 2 years, however, the company has erected many new buildings and put in a complete equipment of the most up-to-date machinery needed in the motor car manufacturing, and altogether has put $1,500,000 into buildings and machinery for the purpose of doing its own manufacturing.

"The business and the plant, therefore, have grown to such an extent that a new capitalization was thought to be desirable, as more nearly representing the asset value of the company than the former capitalization of $300,000."

The annual report of President Hugh Chalmers showed that the last year had been a very successful one for the Chalmers company in every respect. A feature of the report was the remarks made by Mr. Chalmers regarding the future outlook in the motor industry: "We think we have every reason to look forward to another great year in 1911, and for many more such years to follow," said he. "Since our 1911 models were announced a few weeks ago we have been in the midst of a rush of business such as we never have before experienced. We now have more orders for cars for immediate shipment than we have ever had before in the history of the company at one time. We believe we shall have no difficulty in selling all of the cars that we plan to make for 1911. Our policy with regard to the number manufactured will remain just the same as heretofore. We shall not try to see how many cars we can make, but will bend all our efforts toward making the limited number that we do put out of the very highest quality posible. We now have a plant that is second to none in the industry, and if we cared to we could compete with almost any company on the basis of quantity; however, we prefer to keep our production well within the limit of a healthy demand for our cars, and to devote our surplus energies to improving the quality of our product without increasing its price. Even so, we buy materials in sufficient quantities, and we manufacture all parts and also finished cars in large enough quantities to get the full effect of quantity production. No one can get better prices of materials than we get, and no one is in a better position to manufacture than we are, wtih our new large plant and

all of its up-to-date equipment. Some people think that this will be a slack year in the motor car business. As I have said before, our sales records do not show any evidence of this. We do not agree with those people who say that the motor car business will blow up. There may be a blow-off some time, but not a blow-up, and if this blow-off comes it will be a healthful thing, and in the long run will have a beneficial effect upon the industry as a whole, and will work to the interests of the buying public, inasmuch as it will mean the elimination of any concerns which have not or are not now giving the greatest possible value that can be given for the prices asked."

After the meeting the stockholders went through all the departments of the factory, and then all took lunch together in the factory restaurant. Among the stockholders present at the annual meeting, in addition to Mr. Chalmers, were: Edwin Ross Thomas, Alexander McPherson, Elisha H. Flinn, H. P. Baldwin, Irvine B. Unger, J. M. Lonergan, Harry S. Taylor, William H. Miller, Harry W. Ford, Lee Counselman, George W. Dunham, Charles A. Woodruff, C. A. Pfeffer, Charles F. Lott, C. C. Hildebrand.

RACING AT FORT ERIE

Buffalo, N. Y., July 23—Racing for 2 days at the Fort Erie, Ont., track under the auspices of the Automobile Trade Association ended today. The attendance yesterday was small, due in chief to the strike on the Grand Trunk and Wabash railroads. The only access to the track on the Canadian side was by two ferryboats from this city to Fort Erie with a capacity of about thirty motor cars an hour. The result was that more than half the cars with their loads of race-goers were stalled on this side for over an hour waiting for transportation across the Niagara. Despite this disadvantage there were over 5,000 onlookers at today's program. Chevrolet in the Buick was the star of the meet. Summaries:

FRIDAY.

Event No. 1, 5 miles, stock chassis, 160 inches or under

Car and driver	Time
Herreshof, Ned McCormick	6:14¾
Herreshof, Walter Emmons	6:23¾

Second event, 5 miles, stock chassis, 231 to 300 inches

Buick, Louis Chevrolet	6:10
Maxwell, Ed Crane	6:22

Third event, 5 miles, stock chassis, 301 to 450 inches

Buick, Louis Chevrolet	5:45
Pullman, L. Hardesty	6:09
Maxwell, Ed Crane	6:14

Fourth event, 10 miles, stock chassis, 451 to 600 inches

Buick, Louis Chevrolet	10:59
Buick, Arthur Chevrolet	11:20
Thomas, Ed Crane	11:30

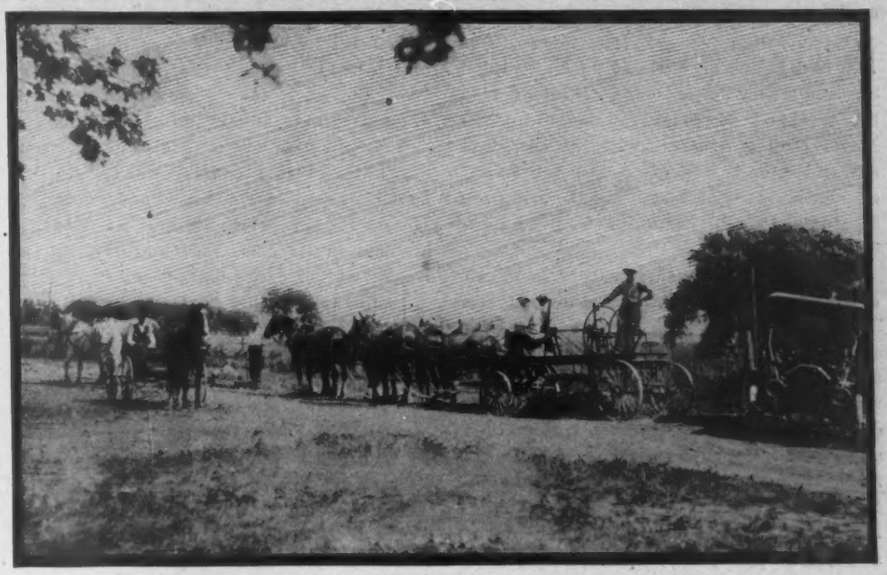
Fifth event, 5 miles, free for all

Buick special, Louis Chevrolet	4:59¾
Buick, Arthur Chevrolet	5:47
Thomas, Ed Crane	6:12

Sixth event, 5 miles, free-for-all, handicap

Maxwell, Ed Crane	5:15¾
Herreshof, Ned McCormick	5:30
Buick, Arthur Chevrolet	5:37
Pullman, H. Hardesty	5:42
Herreshof, Walter Emmons	6:11

Fairmount Park Race Blanks Out



CONTRACTORS PUTTING ELGIN COURSE IN SHAPE FOR NATIONAL ROAD RACES

SATURDAY.

First event, 5 miles, stock chassis, 160 inches or under

Car and driver	Time
Herreshoff, New McCormick	6:30
Herreshoff, Walter Emmons	7:42

Second event, 5 miles, stock chassis, 160 to 230 inches

Buick, Louis Chevrolet	6:11¾
Maxwell, Ed Crane	6:15

Third event, 5 miles, stock chassis, 231 to 300 inches

Buick, Louis Chevrolet	5:35
Pullman, H. Hardesty	5:50
Maxwell, Ed Crane	6:19

Fourth event, 5 miles, stock chassis, 301 to 450 inches

Buick, Arthur Chevrolet	6:26¾
Buick, Louis Chevrolet	6:35

Fifth event, 1 mile exhibition

Buick special, Louis Chevrolet	:55¾

Sixth event, 10 miles, stock chassis, 451 to 600 inches

Buick, Louis Chevrolet	11:50¾
Buick, Arthur Chevrolet	12:65

Seventh event, 5 miles, stock chassis, selling from $1,201 to $1,650

Pullman, H. Hardesty	5:49¾
Herreshoff, Ned McCormick	6:11
Herreshoff, Emmons	6:17
Herreshoff, Smith	6:34
Maxwell, Ed Crane	6:52

Eighth event, free-for-all, 5 miles

Buick, Louis Chevrolet	5:08
Buick, Arthur Chevrolet	5:55

Ninth event, 5 miles, free-for-all, handicap

Herreshoff, New McCormick	5:18
Pullman, H. Hardesty	5:27
Buick, Louis Chevrolet	5:47
Herreshoff, Emmons	6:17
Maxwell, Ed Crane	6:25
Buick, Arthur Chevrolet	6:33

RACING AT WINNIPEG

Winnipeg, Man., July 22—The motor races which were run on the opening day of the Winnipeg industrial fair, July 13, were noteworthy in that the Russell, a Canadian-made car fitted with a Knight motor, made its racing debut, being beaten, however, by Howe in a Maytag, an American car. It was an amateur meet, the 5-mile race for stock cars of 190 cubic inches piston displacement being won by McQuarry in a Croxton-Keeton, who defeated Howe in the Maytag in 7:30. The final of the 5-mile 221-260 class race was won by Howe in 7:13, with Walker second. A 2-mile race was run to decide third place, Brown in the Reo winning.

PHILADELPHIA, PA., July 23—Entry blanks for the Fairmount park 200-mile stock chassis road race have been issued, and as there is assurance of many notable drivers and cars, there is no doubt about its success. The event has the sanction of the American Automobile Association and, as has been the case in preceding years, the Quaker City Motor Club will co-operate with the Philadelphia municipal authorities in conducting it. The contest this year will take place on Saturday, October 8, at 12 o'clock noon. R. E. Ross, who acted in a similar capacity last year, will be the referee, with G. Hilton Gaubert and Joseph L. Kier starters. The following conditions and details of classification are announced in the entry blanks:

The race is to be open to any chassis of a gasoline car which is in accordance with the definition of a stock chassis and to be governed by the following table of piston displacement and minimum chassis weights: 4-B, 301 to 450 cubic inches; 2,000 pounds minimum weight; 5-B, 451 to 600 cubic inches; minimum weight, 2,300 pounds; 6-B, 601 to 750 cubic inches; minimum weight, 2,500 pounds. No car can compete in any class above that to which its weight entitles it. No dead weight of any character or description to be added or attached in any manner to a car as ballast. The entrance fee will be $500. Four prizes are offered for the best time for the 200 miles—first, $2,500; second, $1,250; third, $750, and fourth, $500; while at the same time there will be additional prizes for cars in each of the respective divisions.

In order to further stimulate interest in the 6-hour race for class C cars from 160 to 750 cubic inches displacement, to be conducted by the Quaker City Motor Club, on Saturday, August 6, at the Point Breeze 1-mile track, an invitation has been extended to Ralph de Palma.

SENSATIONAL SPORT AT BRIGHTON BEACH

NEW YORK, July 25—Between 12,000 and 15,000 enthusiasts paid admission Saturday to witness the program of nine races staged at Brighton Beach by the Motor Racing Association. The card was attractive and well-filled and there was enough incident and excitement during the afternoon to hold the interest of the spectators.

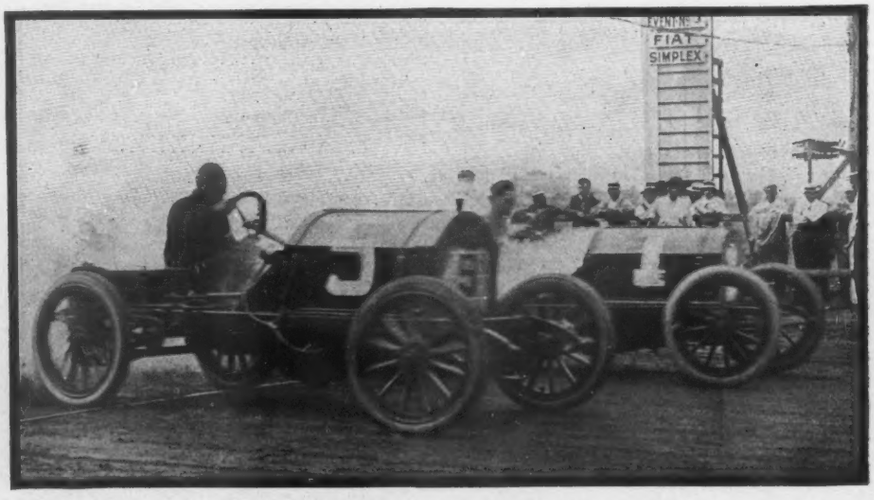
Caleb S. Bragg, in the amateur handicap event, proved the star of the matinee. Starting from scratch, he pushed his big special Fiat along at a hair-raising speed and was picking up his field with ease, when in making the turn into the stretch during the third circuit, his car skidded and before he could regain control, the radiator was butted through the infield fence. The driver kept his head and making a quick turn shot through the fence at a different point, took up the chase once more and managed to get to the wire ahead of his field by about 50 yards.

The duel between the Simplex 90 and the Fiat 60, run in two heats, the first at 5 miles and the second at 2 miles. resulted in a victory for the former. In the first heat the Fiat led for 3 miles, where the Simplex, moving fast in the stretches and hanging close on the turns, caught and passed its rival, winning very easily in 4:41⅘. As an indication of margin the Simplex had in the final mile, it may be cited that the time of the fifth mile was 10 seconds slower than that made in either the third or fourth circuits. In the second heat the Fiat broke first and led for a mile and a quarter, where the Simplex collared its rival and came on to win by three lengths in 1:49⅘, the last mile in :51⅘, a new mark for the track.

Tire trouble was plentiful in the match race and in several of the other events on account of a sharp edge at the head of the stretch where the turn had been cemented and the cars were obliged to plunge off the cement at an angle that proved trying to the tires. There was an agreement in the match race that in case of tire trouble in any heat, the heat might be run over. Both contestants were obliged to take advantage of the rule.

The hour race was well filled and its running was sharply contested. The carded field consisted of eight cars and while No. 17 S. P. O., which broke its steering knuckle in its class race and the No. 16 Buick, winner of its class race, were withdrawn, their places were taken by the Croxton-Keeton and the Palmer-Singer. The Simplex 50 got away with the gun, trailed by the Palmer-Singer and No. 20 S. P. O. The rest of the field was close up, the tail-ender being the Croxton-Keeton which took a position on the rail and plugged steadily along during the whole hour, going faster at the end than at the beginning. The Marion and the Cole 30 also trailed the early pace.

When the cars had settled down to hard work, the Simplex was in front with No. 20 S. P. O. second and the Palmer-Singer third. This order was maintained to the twentieth mile, where the S. P. O. was driven up to the pacemaker and in a fierce struggle managed to lead the Simplex down the length of the back stretch. There the S. P. O. had enough and after trailing for a few circuits, limped around to the stable turn, where adjustments were made. During this process the car was lapped a couple of times and the Palmer-Singer succeeded to second place. The Marion came along steadily between this point in the race and the thirty-third mile and was lying in fourth position when the Simplex threw a tire, leaving the Palmer-Singer out in front with the Marion in second position. By the time the Simplex returned, the Palmer-Singer was a mile and a half in front and it held the lead until the fortieth mile post where it was taken to the pits for new tires. In the meantime the Simplex, coming with a whoop, assumed the lead again and held it to the end, winning by a fraction of a lap from the Marion, which appeared to be gaining slightly upon the winner. The Palmer-Singer, despite its hard luck, was third, while the Cole was fourth and the Croxton-Keeton fifth. No. 20 S. P. O. was sixth and made the last mile 2 seconds faster than the winner. The Houpt-Rockwell was on three cylinders for 10 miles of the 43 it covered and No. 23 S. P. O. retired with a score of only 18 miles.



ROBERTSON AND DEPALMA LINE UP FOR MATCH RACE



DEPALMA STOPPED BY BLOWOUT AND A SKID FOLLOWS

The first event was between two Hupmobiles and was won by No. 7. The further the cars went the greater was the lead of the winner. The final margin was over ½ mile. The second race was between a Cole 30 and a Paterson. The latter led on sufferance most of the way to the tenth mile, where the Cole galloped away, winning by the length of the stretch.

The fourth found a field of five, including three S. P. O. cars, entered by different owners, a Marion and a Correja. The Marion won a beautiful race from No. 23 S. P. O. and No. 20 S. P. O. It was in this race that No. 17 S. P. O. broke its

steering knuckle. The Correja was on three cylinders most of the way.

No. 16 Buick won the fifth event in a sharp drive all the way from the Chalmers entry. The Midland narrowly escaped accident striking the fence at the head of the stretch, but continued to the finish. The seventh was captured by the Fiat 60, which took a winning lead after the fourth mile. The Simplex 50 was second and the Knox third with ¼-mile interval separating them. The Knox suffered severely from tire troubles and finished on two flat tires.

The No. 4 Fiat won the free-for-all with ease. The Knox was second and the Midland took the small end of the purse. No. 16 Buick appeared a certain contender for second honors until the eighth mile, when it retired. The Hupmobile completed eight circuits while the winner was making ten and the Only made two less. A. B. Cordner was chairman of the racing committee and H. M. Swetland presided as referee. Summaries:

EVENT 1, CLASS C, DIVISION 1C, 10 MILES

No.	Car	Driver	Time
7	Hupmobile	Derby	13:35⅗
8	Hupmobile	Dam	14:26⅗

EVENT 2, CLASS C, DIVISION 2C, 10 MILES

3	Cole 30	Endicott	12:32⅗
6	Paterson	Neeley	12:44⅗

EVENT 8, FREE-FOR-ALL, 10 MILES

4	Fiat	Bragg	10:09⅕
2	Knox	Disbrow	10:30
19	Midland	Anderson	10:38⅖
16	Buick	Beardsley	No Fin.
8	Hupmobile	Dam	No Fin.
26	The Only Car	Gloat	No Fin.

EVENT 9, HOUR RACE

			Distance
9	Simplex	Robertson	53½ miles
21	Marion	Disbrow	53¼ miles
18	Palmer-Singer	Cobe	52 miles
3	Cole 30	Endicott	51 miles
12	Croxton-Keeton	Spenney	49 miles
20	S. P. O.	Juhasz	48 miles
8	Houpt-Rockwell	Martin	43 miles
23	S. P. O.	Wishart	18 miles

HILL HONORS FOR STODDARD

San Antonio, Tex., July 24—Tobin de Hymel, driving a Stoddard-Dayton, practically carried off all the honors in the hill-climbing contest at New Braunfels this afternoon, run by the San Antonio Automobile Club. De Hymel negotiated the 1,397 feet of road, which has a rise of 155.7 feet, in :27¾, which time was considerably better than expected. Very little was done to make the hill easier for the cars. Some of the drivers were afraid to open up, because of the dangerous curves and bumps. De Hymel stepped on the throttle and the Stoddard roared up the hill as if it were on level ground. It seemed impossible for any driver to hold his seat under such circumstances. De Hymel made his record of :27¾ in the free-for-all and won the Daily Express trophy cup. This event was the feature of the afternoon entertainment. The Stoddard was entered by the Alamo Automobile Co. Second honors went to the Jackson, driven by M. A. Holmes, which made the grade in :34. Phil Wells in a Moon was third. Summary:

161-230 CLASS

Car	Driver	Time
Stoddard-Dayton	De Hymel	:35
*Hudson	Heffernan	:52
Hudson	Heffernan	:47⅕

231-300 CLASS

Moon	Wells	:36
Kisselkar	Salley	:42

301-450 CLASS

Velie	L. De Hymel	:32
*Jackson	Holmes	:38
Jackson	Holmes	:35⅕

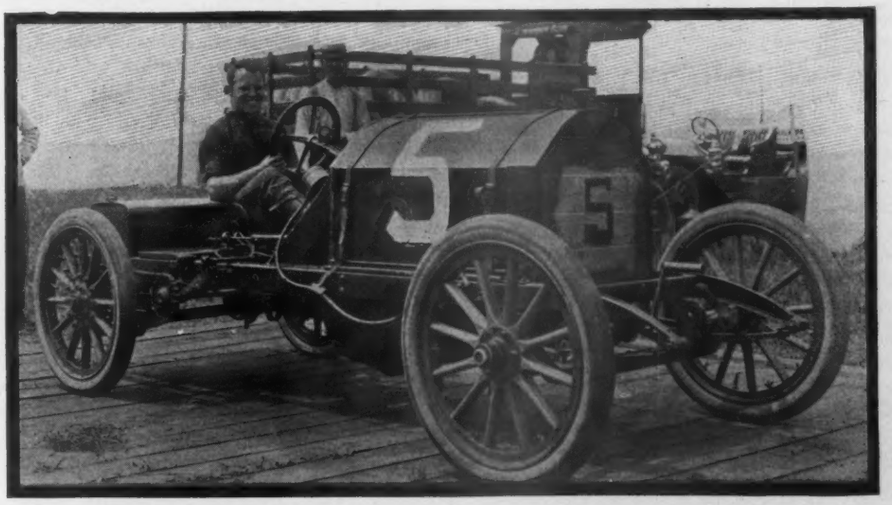
FREE-FOR-ALL

Stoddard-Dayton	De Hymel	:27¾
Jackson	Holmes	:34
Moon	Wells	:36
Ford	Gibson	:39

* Two trials.

WINNING OVER THE FARMERS

Syracuse, N. Y., July 25—The Automobile Club of Syracuse has a unique plan for enlisting the support of the farmers in its road sign movement. The ruralites are becoming attracted by the club's gasoline signs, and write in for them. They are sent, and a follow-up letter goes out in time asking the recipients to forward plans and specifications regarding unposted territory containing forks in the roads, dangerous hills, trolley and steam grade crossings, etc. The specifications come and the signs are sent out and posted. Over 200 signs went out of the club's office on Wednesday of this week alone. Forman Wilkinson, secretary of the club, has a new one. The club has always strenuously opposed careless driving in the country districts, which serves to enrage the populace. The farmers know this, and when the instituting of a speed trap is threatened in reprisal, certain friendly ones tip off Mr. Wilkinson. In an effort to assist in the promotion of safe and sane driving through these hamlets, Mr. Wilkinson has gotten out two new signs, both bearing the signature of the club.



ROBERTSON IN SIMPLEX, WHO DEFEATED DEPALMA, FIAT

EVENT 3, SPECIAL MATCH RACE, FIRST HEAT, 5 MILES; SECOND, 2

5	Simplex 90	Robertson	4:41⅗
1	Fiat 60	De Palma	

Second Heat:

5	Simplex	Robertson	1:49⅘
1	Fiat	De Palma	1:50⅗

EVENT 4, CLASS C, DIVISION 3C, MILO TROPHY, 10 MILES

21	Marion	Disbrow	10:55⅖
23	S. P. O.	Wishart	11:11
20	S. P. O.	J. Juhasz	11:52
11	Correja	Taylor	No Fin.
17	S. P. O.	Batts	No Fin.

EVENT 5, CLASS C, DIVISION 4C, 10 MILES

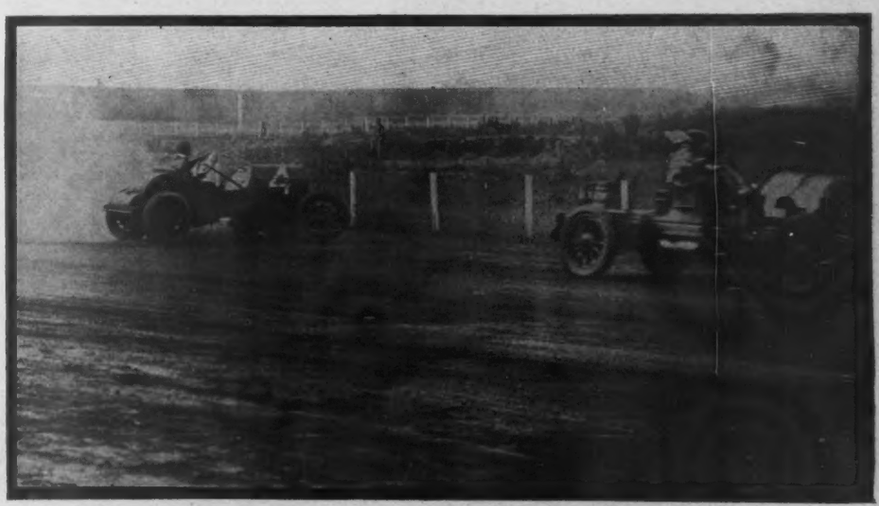
16	Buick	Beardsley	10:05⅖
14	Chalmers	Lorimore	10:09⅗
19	Midland	Anderson	10:40

EVENT 6, 5 MILES, AMATEURS, HANDICAP

4	Fiat, scratch	Bragg	4:46⅕
24	Simplex :15	Doig	5:09⅗
16	Buick :20	Beardsley	
23	S. P. O. :30	Wishart	
25	White St. :55	Bofinger	

EVENT 7, CLASS C, DIVISION 5C, 10 MILES

1	Fiat	De Palma	10:00⅘
9	Simplex 50	Robertson	10:10
2	Knox Giantess	Disbrow	
18	Palmer-Singer	Cobe	
8	Houpt-Rockwell	Martin	



BRAGG IN FIAT GOES THROUGH FENCE AND THEN WINS

Northwest Has Its Little Glidden

MINNEAPOLIS, MINN., July 23—The second annual reliability run held under the auspices of the Minnesota State Automobile Association started from the St. Paul hotel at 7:30 o'clock yesterday morning to cover 658.2 miles of fine roads to Sioux Falls and back to Minneapolis. Dr. C. E. Dutton refereed the event to Sioux Falls. The final entry list showed eighteen cars as contesting and six making the run as non-contestants. The pilot car left the St. Paul hotel at 6:15 a.m. Reuben Warner, Jr., president of the Minnesota Automobile Association, in a Pierce-Arrow car driven by Julius Huckow, was the first to follow the pilot. He started at 7:30. After him trailed the sixteen other contestants and the six non-contestants, press machines, pilot car, pacemaker and two others who did not signify their intention of starting in time to be classified. The starters were:

Those Who Entered

No.	Car	Driver
1	Pierce-Arrow	Julius Huckow
2	Stearns	J. C. Littlewood
3	Hupmobile	Fred Starr
4	Reo	C. A. Lewis
5	Staver	Floyd Duis
6	Halladay	O. A. Talmland
7	Cadillac	C. Rudstenstad
8	Auburn	W. Y. Ranger
9	Regal	Arthur La Roche
10	Cole 30	T. J. Seifert
11	Cole 30	W. A. Alson
12	Ford	A. A. Hanson
13	Franklin	A. W. Clark
14	Hudson	O. E. Martin
15	Independent	T. W. Shannon
16	Glide	C. E. Sylvester
17	Chalmers 30	C. J. Gilbert
19	Cartercar	

Six non-contestants were an Apperson pilot car, Corbin pacemaker, Pierce-Arrow and Studebaker press cars, and others.

The run for Friday morning was from St. Paul to Owatonna. The cars covered the distance to Owatonna, 69.2 miles, in 3 hours 45 minutes, arriving there at 11:15. The first car checked out from Owatonna at 1 p. m. for Mankato, a distance of 93 miles, making the total run for the day 162.2 miles. All of the nine Minneapolis cars with their drivers, passengers and observers arrived long before schedule time and with few penalties.

Second Day's Running

Minneapolis, Minn., July 24—Twenty-six cars checked in on time Saturday night at the Cataract hotel, Sioux Falls, S. D., just 342.1 miles from the Twin Cities. The 2 days' running over roads of all kinds, ranging from mountainous passages and long, smooth, level expanses to veritable seas of weeds in which the machines were almost buried, brought the tourists into Sioux Falls Saturday night.

Beyond one car going into a ditch and rolling over on its side, no accidents of a serious nature marred the smoothness of the run. Tire troubles and isolated cases of ignition trouble engaged the attention of the mechanics. Several fuel pipes became disconnected and one steering gear met grief, but all damages were such as could readily be repaired. In most instances where cars were delayed through some disability, they generally arrived at the controls ahead of schedule time.

Three miles west of Windom Saturday afternoon, the Auburn 40 went over the embankment when the No. 1 Pierce-Arrow entered by Reuben Warner, president of the association, attempted to pass it on a particularly narrow stretch of the road. Walter Ranger, who was driving the Auburn, drew to the right of the road as far as possible and claims that when the Pierce car passed him it struck his machine on the left hub, pushing the car over the edge of the embankment. The Auburn car ran over the side of the embankment and plunged downward on its side. No one was hurt. A refilling of water, gasoline and oil was all the Auburn needed and it continued, reaching Sioux Falls ahead of schedule. One of the forward springs on the car was knocked backward a fraction of an inch. It is possible that the penalties may be cancelled in both cases, as the Pierce car was trying to regain its position in the line after having gone on a wrong road through a mistake of the pilot car.

Departing from Luverne, where a stop of 30 minutes was made by all cars Saturday afternoon, a steering knuckle on the Cartercar broke on a curve, leaving the car unmanageable. The car ran upon the sidewalk before it could be stopped. Fifteen minutes' work with the assistance of a blacksmith put the car back in shape with the knuckle securely welded.

At Worthington, six of the large cars, following closely on the pacemaker, strung out more before reaching Luverne. Ten miles east of Luverne, the worst going encountered during the trip was run into in the form of 4 miles of weeds, ranging from 2 to 5 feet high. There was hardly the slightest semblance of a road and the tourists had only to plunge blindly into the sea of green, not knowing what security their tires would reach or what obstructions the bodies of the cars would clear. The pace through the weed ocean was slow, especially for the smaller cars, which at times were entirely lost from sight in the green undergrowth.

The Halladay and Glide cars came through with comparatively clear scores. The Glide broke a spring Friday and the Halladay had trouble with new spark plugs. The Hupmobile and the Flanders, two of the smallest cars in the contest, surprised all by their performance. The following penalties were made charged against various contesting cars up to the present time:

No. 6—Regal, breaking tool box seal.
No. 11—Cole, motor stopped for 5 minutes, caused by dirt in gasoline.
No. 13—Franklin, breaking seal. No penalty was assessed. The seal was broken to assist the Auburn.
No. 16—Glide, tool case seal broken.
No. 17—Chalmers, 4 minutes late at control.
No. 18—Cartercar, repairs to the steering knuckle.

Tourists Finish Run

Minneapolis, Minn., July 27—Special telegram—At Marshall the Little Glidden tourists completed the longest morning run of the trip Monday noon, leaving Sioux Falls, S. D., at 7:15 a. m. the journey to Marshall being 114 miles. The varying conditions of the roads between Sioux Falls and Marshall made the going somewhat difficult, but the run was free from accidents or troubles of any kind. Only two cases of tire trouble were reported. The Heaney Auto Co., of Minneapolis, changed its mind about withdrawing the Stavers-Chicago and re-entered on a new time schedule. Those cars which reached



START OF THE BIG RELIABILITY RUN OF THE CLEVELAND NEWS



Marshall were well ahead of the time schedule.

In order to give the tourists opportunity to rest briefly en route, two intermediary controls were authorized. The first was at Flandreau, S. D., where a stop of 15 minutes was made; the second at Tyler, Minn., where the motorists spent 30 minutes. After a short run of 52 miles to Redwood Falls, the cars were blanketed for the night. Yesterday all cars left Redwood Falls at 7:30 a. m. The non-contestant Pierce-Arrow car entered by J. P. Bowling, of St. Paul, broke a sheaf in the front spring when it struck a ditch. The Auburn entered by the Ranger Automobile Co., of Minneapolis, also suffered a broken front spring and was taken to a garage at Olivia. The next stop was made at Glencoe, Minn., from which point the cars picked up the last leg of the trip to Minneapolis, all of them arriving about 4 o'clock p. m.

Cars claiming perfect scores are the Pierce-Arrow, Reuben Warner, St. Paul; Franklin, Western Auto Co., St. Paul; Hudson, H. L. Smith; Halladay, Heaney Auto Co., Minneapolis.

NEW ORLEANS COUNTS CARS

New Orleans, La., July 23—For the first time motor cars are listed as a separate class of property by the state board of equalization, distinct from other classes of vehicles. This is the first attempt at a motor census in Louisiana, and in the parishes outside of Orleans, it is believed to be accurate. Orleans parish, however, was astonished to find but 390 cars credited to the city, while licenses for 1,225 are on file in the office of the inspector of police. There are likely to be parishes in Louisiana without motor cars for a few years to come, at least until the influx of northern settlers, already well under way, fills up the parishes and makes necessary highways. The case of East and West Feliciana is typical. The only town of any size in the two parishes is picturesquely situate upon 45-degree hills. The country surrounding is of the same character. The residents are planters and farmers, fond of horseflesh. Horseback is the favorite mode of traveling, and fox hunting is the substitute for joy rides. In good weather motor cars could be used, but with the hills, sand beds, fords and bumps they wouldn't last long. In the swamp parishes conditions are different, but the roads are worse. It is gratifying to see, however, that the parishes in which there are cities are well supplied, notably Caddo parish, in which is Shreveport, a city of about 30,000, in which there are ninety-nine cars. Country Louisiana is a virgin state for the agent who will follow in the procession headed by the lumberman, behind whom come the planters, farmers and improvements.



Clevelanders Hold Their Big Test

CLEVELAND, O., July 25—At 6 o'clock on the dot this morning Starter George Collister cried "Go" to John Rauch at the wheel of the little Hupmobile and the Cleveland News reliability run was on. Exactly thirty-two contesting cars and half a dozen non-contesting cars were parked there. Over 125 drivers, observers, mechanics and local agents were on hand as participants in the run.

The first car to start out was the Studebaker pathfinder and confetti car with Ira Fouche, Studebaker state representative, at the wheel. He was followed by a Peerless car carrying a giant Gabriel horn organ, with C. W. Logan, of the Gabriel factory tooting out the rollicking strains of "We Won't Go Home Until Morning."

George Collister, as starter; William F. Bonnell, president of the Cleveland Automobile Club, as chief referee: M. M. Maxwell, secretary of the Cleveland Automobile Club, as chief observer, and St. Clair Couzzens as assistant referee, worked like Trojans, with the result that every car got away on the dot of the minute without an accident or a single thing to mar the auspicious occasion. The cars were started 3 minutes apart.

Nearly every car of prominence that is handled in Cleveland was entered in the run. In a number of instances 1911 cars were brought out for the first trip or contest that those models have made. Prominent in the run are the Thomas Flyer, the hero of the round-the-world New York-to-Paris contest, in all its original glory; the historic Oldsmobile Mudlark, which carried representatives of the Cleveland newspapers, and the 3-year-old Hines car, entered by its maker and driven by Frank Moore without a mechanic, a car that has made its 48,000 miles.

Of the 1911 cars entering the first run of their existence are the 50-horsepower Owen, driven by F. Monroe, and the Palmer-Singer, driven by Hugh Miller, the Cleveland agent, a six-cylinder 40-horsepower machine.

Advices from the cities and towns along the route of the run were to the effect that a fairly heavy rain had fallen during the night. Following is a list of cars and drivers:

Oldsmobile, C. H. Winters; Studebaker, Ira Fouche; Palmer-Singer, Hugh Miller; Buick, ———, E-M-F, L. F. Frisch, Akron, O.; Henry, Jack Sperry; Regal, J. C. Hipp; Hinescar, O. Alexander; Gabriel, A. S. Soper; Firestone-Columbus, Harry McIntosh; Atlas, Harry Kortz; Pierce-Racine, C. W. White; Hupmobile, J. M. Rauch; Cutting, J. C. Koepke; Maxwell, Frank Santry; Brush, D. E. McCoy; Columbia, C. G. Bleasdale; Gaeth, Otto Linder; Krit, Harry Gabriel; Owen, F. Monroe; National, D. E. Foote; Garford truck, Ralph Kinney; De Tamble, H. W. Orndorfer; Hudson, William McCalla; Packard, Thomas Swan; Hinescar, F. J. Moore; Norwolk, H. B. Olds; Oakland, Fred Krune; Stoddard-Dayton, Harry S. Moore; Overland, H. C. Knudson; Chalmers, John Stambaugh.

First Day's Run

Columbus, O., July 26—Thirty-six of the cars completed the first of the long 3-days' journey in the Cleveland News reliability run. They brought into Columbus Monday night over 100 tired and travel-stained but enthusiastic motorists. The day's journey was through a country rich in natural beauty, but parched for want of rain, making the dust heavy and the going hard for the cars.

All day long the contestants were the recipients of unusual attention. There were delegations of motorists to greet them at the outskirts of many towns and the countryside was dotted with watching groups. The country dweller is wise in his generation and picks for his viewpoint the stiffest hills in his neighborhood, cannily knowing that there the cars will receive the severest test.



CLEVELAND OFFICIALS—COUZZENS, BONNELL, COLLISTER AND MAXWELL

Gossip of the Makers in Detroit

DETROIT, MICH., July 25—What is the real status of the motor car industry in Detroit at the present time and what is the outlook for 1911? These questions appear to be of paramount interest in Detroit just now. They are the main topics of conversation in financial circles and the local press is devoting columns of space to a discussion of them. All this, quite naturally, has caused a revival of the periodical rumor that a slump is imminent, and there is the usual talk of curtailment of output, the survival of the fittest and so on, growing out of the fact that a few of the companies have found it expedient to lay off some of their help for a brief spell, which is not unusual at this season.

Detroit Paper's Comment

One Detroit paper, which purports to have made a careful canvass of the situation, sizes it up this way: "While there is an attitude of conservatism among the manufacturers, and while concerns that are not ready for a little harder selling conditions are likely to suffer, the big companies that are the real factors in the motor car prosperity of Detroit will not be seriously affected. Detroit need not fear a serious slump in business on account of conditions in the motor trade. It is beginning to be realized by the manufacturers that the time is not far off when the demand for motor cars will stop growing at the stupendous rate of the past few years and conditions in the trade will come down to a normal basis of business. This means beyond any question that the weaker concerns will be eliminated from the race and either will be absorbed by the larger companies or go to the wall. There are indications at present that a little lessening in the demand will precipitate this long-expected flurry at once, but once it is over the general conditions will be much improved and the trade really will be healthier than it ever has been before. It is an open secret now that the trade for 1910 was not up to the expectations of the manufacturers. The chief reason assigned is the bad weather of the spring and early summer. On account of this smaller demand, several companies curtailed their outputs. Some of these find themselves with a large number of unsold cars on their hands or in the hands of their agents. This ties up a large amount of capital and has resulted in financial difficulties for the companies involved. In most of the Detroit factories the floors are swept clean, the output being all sold."

Good Outlook for 1911

Many of the makers admit that orders have been scarce during the past month, but there are already signs of improvement and a good outlook for 1911.

According to a report printed in the local press and not denied, the net profits of the Cadillac Motor Car Co. for the fiscal year just closed were in excess of $3,000,444, or about 63 per cent of the purchase price of $4,750,000 paid for the Cadillac plant by the General Motors Co. a year ago. A later report is to the effect that the profit was nearer $3,500,000. The company plans to put out 12,000 cars for 1911. It has received from agents advance payments on 8,000 of these and the remaining 4,000 also are contracted for, although no advance payments have been made on them. Earlier in the year the Cadillac had some very pretentious building operations under contemplation. While all of the additions and new structures projected will be erected ultimately, only one of them will be built this year. This, with the old street car barns recently acquired, will give the company all the additional facilities required for the immediate future and will be more in conformity with the conservative policy that has been followed by the Cadillac company from the outset.

Frank Briscoe, chairman of the executive committee in charge of the Detroit division of the United States Motor Co. and president of the Brush Runabout Co., pointed to the extensive building operations the United States Motor Co. now has under way in Detroit as showing its confidence in the future of the industry as far as its own operations are concerned.

"The Brush Runabout Co. is just completing its 1910 output," he said. "We are preparing to turn out at least 15,000 cars next season and by January 1 we may decide to increase the number to 20,000. The past season's business brought a satisfactory profit, which, we expect, will be trebled next season. The Briscoe Mfg. Co. has cut out its night work, but is running practically as strong a day shift as ever. Its sales of parts, exclusive of the Brush runabout business, have amounted to $1,300,000 for the past year and we expect they will be about $2,000,000 for the coming year. We have plenty of orders in hand and have had some few hold-ups but no cancellations. In view of the scare talk we had looked for poor collections this month, but they have been normal. None of the constituent companies of the United States Motor Co. has had difficulty in disposing of its product and each anticipates a larger product the coming season.

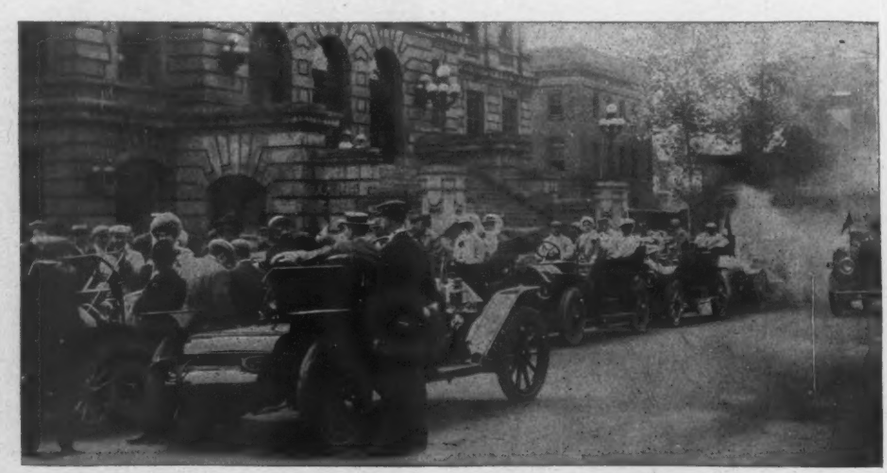
"As to the general situation, I doubt if there is a concern, provided it is properly organized and managed, that is not as strong financially as any company of the same capitalization in any other line. There is, however, a general feeling of conservatism through the trade and some of the wild plans for increase have been abandoned or modified."

In the opinion of William E. Metzger, of the Metzger Motor Car Co., the average output of the motor car industry in the future will be about 200,000 cars per year, representing a total value approximately of $225,000,000.

Want Studebaker in Detroit

The fact has just come to light that plans have been quietly under way for some weeks past for the transfer of the Studebaker interests from South Bend to Detroit, which would mean the actual and physical consolidation of the E-M-F and Studebaker plants. Ever since the reorganization of the E-M-F company in New York early in the summer, it now transpires, President Flanders has been working to secure the consent of the Studebaker stockholders to the transfer and has succeeded. The next step was the purchase at a cost of $300,000 of a large tract of vacant land lying along Clark avenue, north of the Wabash and Pere Marquette tracks, on the west side of the city. The land south of the tracks, comprising an entire square, was acquired some time ago and the Flanders plant is located here.

To take care of the Studebaker end of the business the E-M-F had planned to build on the newly-acquired property north of the tracks, connecting the two groups by means of a tunnel under the railroad tracks. A contract was entered into between the E-M-F and the two railroads and engineers were instructed to prepare plans for the tunnel, the estimated cost of the



START OF RECENT CONTEST OF SYRACUSE AUTOMOBILE CLUB

undertaking being about $15,000, but within the past few days an unexpected obstacle has arisen.

The right of way, it transpires, is owned by the Detroit Union Railroad Depot and Station Co., the Wabash and Pere Marquette occupying it under a perpetual lease. This company now steps in and demands an annual rental of $3,000 from the E-M-F for the privilege of tunneling under the right of way and the plans temporarily are in the air. The E-M-F company maintains that the depot and station company has no right to demand a rental for this privilege and quite a spirited controversy has developed between Secretary Robert M. Brownson, of the E-M-F, who was a lawyer before he went into the motor car business, and Richard P. Joy, vice-president of the station company, who also is a prominent banker. The controversy has taken the form of an exchange of open letters and Mr. Brownson has not been backward in saying just what he thinks of the position Mr. Joy's concern is taking. Mr. Brownson goes so far as to say that the E-M-F may remove to some other city if the station company persists in its attitude.

Many Bid For Plant

"We have been besieged with offers from other towns," he declared, Saturday, "All sorts of inducements are offered and some very flattering ones, too. While we would like to remain in Detroit, we do not propose to permit ourselves to be hampered and annoyed in this fashion."

The E-M-F pay roll in Detroit alone amounts to $300,000 a month and will be increased materially if the plans outlined go through, for the contemplated extensions would provide employment for about 2,000 men. The probabilities are that the existing difficulty will be straightened out in a few days and that the work will proceed. The Detroit board of commerce may take a hand in the matter if the parties are unable to come to terms.

Work on the Detroit factory of the Alden Sampson company is progressing rapidly. The foundations are laid, the footings are in and the entire building, measuring 150 by 1,050 feet, will be completed by September 15. The contract for the administration building was let during the past week. This will be 55 by 75 feet, two stories high, with outer walls of white pressed brick. General Manager Morris Grabowsky plans to start moving into the main building as soon as the first 400 feet are completed, which will be about August 10, it is expected.

The Hale Motor Machinery Co. has purchased a factory site, 196 by 200 feet, on Franklin street, between Joseph Campau avenue and Chene street, and will build at once. The price paid for the land was $14,000.

The manufacturers of the Haupt-Rockwell high-power cars are planning to invade the Michigan field and have engaged Stanley F. Bates & Co. as their Michigan distributers. It is planned to establish a garage and salesroom in Detroit and a full line will be carried.

The Alpena Motor Car Co. recently organized by Alpena and Mount Clemens capitalists, announces that it will place its first machines on the market some time in August. The company is making a touring car known as the Alpena Flyer. The officers of the company are: President, D. D. Hanover; vice-president, William Krebs; secretary-treasurer, W. B. Roberson; directors, P. Culligan, C. H. Nunneley, H. V. Grosbeck, W. N. Trombley and the officers.

Owing to largely increased business in this territory, the Ohio Seamless Tube Co., of Shelby, O., manufacturer of cold drawn seamless tubing, has opened a selling office in this city at 913 Ford building, with Lloyd Brown in charge.

Maxwell Owner Wins Watson Cup

SYRACUSE, N. Y., July 23—The Automobile Club of Syracuse held on Wednesday of this week its first annual contest for the B. E. Watson trophy. It was an instructive run, so called, based upon the provisions of the new motor law which takes effect in the Empire State August 1. A secret time was established which, based upon all requirements of the new law, was fixed at 6 hours 7¾ minutes for a run from the court house here to the Spring house, at Rexford Falls, where dinner was taken, and return, a total of 110 miles. The cup was won by T. E. Lawless, one of the new members of the club, in 6 hours 6¾ minutes.

Mr. Lawless' car was a Maxwell. Miss Nettie Grody, one of the most expert of the city's women drivers, won with a Pullman a silver cup donated perpetually by the club to the woman driver coming closest to the secret time. Miss Grody's time was 6:03. Mrs. Henry E. Mills, in a Franklin, was next among the women with 5:50. There were three other women drivers. The men finishing nearest to Mr. Lawless' time were W. J. Latimer, 6:02, and F. L. Wightman, 6:10.

Thirty-seven cars started, carrying 173 people, and all finished. There were but three delays necessitated on the out trip and but one on the return, all being due merely to tire trouble. The total value of the cars in making the trip was estimated at $111,000. The first car started from here at 8:15 in the morning, it being that of President Smith. Ideal weather conditions prevailed; the roads were in fine condition, and the route was pronounced one of the most picturesque in the state. A feature pleasantly noticeable was the interest displayed by residents of the villages through which the cars passed.

The mechanical experts on the trip considered it a good, hard test for the cars, some of which were 4 or 5 years old, and that the run was made with a total of four punctures forming the sole mishaps was considered a splendid commentary upon general motor construction of the present day. Summary:

No.	Name and car	Time
1	H. W. Smith, *Packard	.....
2	B. E. Watson, *Oldsmobile	.....
3	M. C. Smith, Amplex	5:06
4	George E. Messer, Franklin	5:14½
5	H. W. Chapin, Thomas-Detroit	5:02½
6	P. B. Ward, Winton	6:21½
7	Charles Ludwig, Cadillac	5:35
8	P. E. Peacock, Buick	6:17
9	A. T. Brown, Packard	5:10¾
10	H. D. Weed, Speedwell	5:25
11	Strait & Shaw, Welch	5:36
12	D. Millen, Buick	5:35¾
13	R. P. Byrne, Speedwell	6:14½
14	J. J. Barber, Pierce-Arrow	5:39
15	Mrs. L. P. Kellogg, Buick	5:39
16	Miss Nettie Grody, Pullman	6:03
17	Mrs. H. E. Mills, Franklin	5:50
18	G. L. Mardin, Selden	5:57½
19	Charles A. Smith, Oldsmobile	5:58
20	A. M. Chase, Chase	5:45
21	E. L. Wright, Maxwell	5:51½
22	A. J. Conine, Buick	5:46¼
23	F. L. Wightman, Winton	6:10
24	E. C. West, Stoddard Dayton	5:59½
25	George J. Arnold, Cartercar	5:47
26	Mrs. J. E. Hefferman, Knox	5:43½
27	George J. Hessler, Franklin	6:16
28	W. J. Latimer, Buick	6:02
29	W. L. Brown, *Inter-State	.....
30	T. E. Lawless, Maxwell	6:06¾
31	Mrs. Susan Millan, Packard	5:43½
32	H. H. Baker, Pullman	5:21
33	Dr. Albert Fisher, Selden	5:54
47	C. A. Benjamin, *Packard	5:21
48	H. F. Smith, Franklin	6:33½
49	H. C. Hyde, *Chalmers	5:40½
50	F. Wilkinson, *Franklin	5:45½

* Non-contestant



SYRACUSE CLUB RUN WINNERS—T. E. LAWLESS AND MISS NETTIE GRODY

Paris Show Certain This Winter

PARIS, July 17—After an interval of 2 years, Paris will hold its salon in the grand palace, from December 3 to December 18 next. The coming show will differ from all others by the fact that it is the first to be held under the direct control of the manufacturers. Formerly the Automobile Club of France formed a joint committee to which a certain number of manufacturers were admitted, without, however, having any decided voice in the management or any share in the profits. The coming show is managed by a joint committee formed from the four most important trade associations in France, with the Automobile Club admitted to a position on the honorary committee only.

While maintaining the elegant character which has marked previous shows, there will be no unnecessary expenditure. This year for the first time a uniform scheme of decoration will be adopted, the organizing committee placing the stands at the disposition of the exhibitors complete with decorations, fittings, and electric light.

There will be ten classes or divisions at the show. The first will include complete motor cars and chassis; the second, commercial and industrial vehicles; the third, motors; the fourth, commercial cars; the fifth, motor cycles and bicycles; the sixth, tires and wheels; the seventh, motor car and motor cycle and bicycle parts; the eighth, accessories and supplies for cars, motor cycles and bicycles; the ninth, bodies and accessories; the tenth, various wares and articles having relation to the motor car, motor cycle and bicycle sport.

There will be stands of three sizes, respectively 80, 60 and 40 square meters—430 square feet—in the main part of the building. This main building is divided into three sections. In the first section the price per square meter—10.764 square feet—is $50 for a large stand, $45 for a middle stand and $40 for a small stand. In division two these prices are respectively $40, $30 and $20, and in the third division the price per square meter is respectively $30, $20 and $12. In the other parts of the grand palace all the stands will be of 60 square meters and will vary per square meter from $7 to $12.

Half of the price must be paid when making the application and the other half when the allotments have taken place. If a manufacturer does not occupy the stand he has taken he cannot receive his remittance back and the executive committee will dispose of the stand for its personal purpose.

The show organization is placed in the hands of a committee of twenty members, of which six represent the Automobile Manufacturers' Association, six the Chambre Syndicale de l'Automobile et des Industries qui s'y rattachent, six the Cycle and Automobile Syndicate and two the Bicycle Manufacturers' Association.

If after all the expenses in connection with the show have been deducted there remains a balance, then 30 per cent will be given to all the exhibitors, in proportion to the amount they paid for their stands, and 40 per cent will be given to the exhibitors who are either active or honorary members of any of the four associations referred to above, the percentage to be according to the amount paid by them for their stands. Any member of several associations will be considered as belonging to only one.

The executive committee will have the full say about this money distribution and the exhibitors agree in advance to accept the declarations which might be made by the committee on the subject.

The committee on organization consists of Baron de Zuylen, A. Darracq, Marquis de Dion, Delachanal, A. Peugeot and G. Rives, as honorary presidents. C. Richardiere is the effective president, J. Niclausse vice-president, A. Citroen secretary, and G. Ducellier treasurer. The members are: Horderel, Bozier, Brasier, Chenard, Cottenet, A. Darracq, Delachanal, P. Delaunay-Belleville, de Dion, Dutreux, Gobron, Hammond, Hinstin, de Knyf Pagis, Petit, F. M. Richard, G. Richard, Sapene and M. Turcat. The general secretary is H. Cezanne. For all particulars and application blanks letters should be addressed to the president du comite d'organisation, 51 rue Pergolese, Paris.

TRAFFIC WORRIES LONDON

London, July 15—What can be done to improve the traffic conditions in the great city of London? This is a question which is agitating the local authorities. First of all, it appears to be manifest that in certain streets it no longer is possible to have horse-drawn vehicles, motor cars, street cars and the multitude of foot passengers go at the same time. Either must such streets be given up entirely to the pedestrians or else there must be a certain number of hours during the day during which motor cars, as well as horse-drawn vehicles, are not to be allowed the use of those streets.

If such a step is taken in about a dozen important thoroughfares there is no doubt the result will be found excellent. During the early morning hours, as well as after 9 at night, there would be no need of special regulations, but during the business hours this is absolutely needed. Another good measure would be to direct vehicles of the same type—that is, for instance, all horse-drawn vehicles and all motor-driven cars—to follow certain specified streets, instead of having all sorts of vehicles pass along the same road. Such division of the vehicles could be made easily at important squares and places where several streets meet.

To give an idea of the vehicles which are registered in London herewith is a record showing what vehicles there were in Great Britain's capital on May 31 of this year:

Motor cabs	5,070
Motor buses	1,063
Hansoms—horse-driven	2,648
Four-in-hand—horse-driven	3,066
Horse-driven buses	1,518
Motor tramways	2,289
Horse-driven tramways	123
Total	15,777

From another statistic herewith are the records since 1904 as to the number of motor and horse-driven cabs and buses.

Year	Motor cars	Horse cabs	Motor buses	Horse-driven buses
1904	1	11,404	13	3,623
1905	2	11,057	31	3,551
1906	19	10,931	241	3,484
1907	96	10,492	783	3,964
1908	723	9,818	1,205	2,557
1909	2,805	8,475	1,133	2,155
1910	5,070	5,714	1,063	1,518

According to unofficial figures, there were 5,486 motor cabs in operation on June 15.

Great Britain's business for the 5 first months of 1910 shows up with great advances in favor of the British manufacturers. Including motor cars and motor car parts, the value of the exported goods amounts to $2,408,765, as compared with $1,513,765 in 1909. In 1910—5 months—1,266 chassis and complete cars were exported, while during the same period last year only 813 were exported. There were imported into this country during the same period of 5 months 5,471 chassis and complete cars, as against 3,325 last year, the value this year being $5,986,835, while last year the value was $4,933,255. The increase in imports thus is already of over $1,000,000, but the exports nearly offset this amount.

Parts were imported during the first 5 months of this year having a value of $4,091,815, while last year's was $3,268,455. On the other hand, the British manufacturers have exported $1,936,690 worth of parts thus far this year, as against $908,645 during the first 5 months of last year.

BELGIUM'S BUSINESS METHODS

Brussels, July 12—American cars cannot be sold like American shoes, at least in Belgium, and the American manufacturer who thinks all he has to do is to send a man over here with a sample car and say to the dealer: "Here, take it; it's 50 per cent cheaper than anything that is made in your country and will allow you a fine profit," is very much mistaken.

In this little cramped country, where there are more car manufacturing concerns than in any other country in the world, in proportion to the population of the land, and where French cars are sold at premiums, there still is room for low-priced cars, but it will require other sort of advertising and demonstrating and show-me work than the half or full hour talk, even accompanied by a demonstration, to get the dealer of this country interested.

Motor Age's correspondent spent some time recently with Sigmund Krausz, head of the export department of the Willys-Overland Co. Mr. Krausz came with a big Overland, in which he had traveled through

Great Britain and France before reaching Brussels. Every car dealer of any consequence in the Belgian capital was visited, as were people engaged in other business, but who are familiar with American cars. Almost in every instance a sort of bombshell was thrown, the contents being that the thrower knew something about American cars, and was by no means any too enthusiastic about them.

While compliments were numerous and the dealers and their mechanical men really and truly interested, it was another thing when it came down to talking seriously, to mentioning money. And right here is the point which the American manufacturer must bear in mind when he wishes to do business in Belgium, and most likely in nine-tenths of other European countries. The agents here will not under any circumstances introduce or try to introduce an American car, be it the best, but entirely unknown in the land.

"If you want me to try and do business I will be glad to do so," said several important tradesmen, "but the only way I will do so is that you place one or several cars—if several models are made—with me as samples. Not for any price will I pay cash or agree to pay in a certain time. The car looks good to me. How do I know that it will also look good to the people here? We already have so many cars here, some exceedingly cheap ones, that it gets to be a tour de force—a feature—to introduce successfully a foreign car, and much more so an American car."

The Belgian dealers pay but a small sum, $100 generally, for car for which they contract. They get plenty of time to make payments and have the advantage of not having to wait very long to get them. Few have sample cars or even one car. Often the prospective buyer is shown some car which happens to belong to an owner and which happens to be in the garage. Often, too, when a dealer is able to afford a car for himself this car serves as the demonstrating car to get business.

The profit which the Belgian dealer or agent makes varies, and, unbelievable as it may sound, there are agents who are satisfied, who are happy if they sell a car at a profit of 20 francs—not $20, but 20 francs, which is equal to about $4.

There are many who will be satisfied to make only 250 francs or $50 profit by selling a local or French car than by taking the chances with an American car which, if they would sell at a similar price as their lowest local car, would net them from $250 to $400. One dealer said he would rather wait 6 months and sell a car and surely make his $50 than try to dispose of an American car quite unknown and which sells and might not sell, even at ten times the profit.

About the only way the American manufacturer can hope to do business here is to open a branch, or else give a reputable agent some of his cars to sell on a commission basis.

Poege Winner of the Russian Tour

ST. PETERSBURG, July 16—Willy Poege, the German driver, won the Emperor Nicholas tour in a Mercedes. Another Mercedes was second, a Gaggenau third and then came a Mercedes, four Benz and two Mercedes before any of the other foreign cars which took part in the tour secured a place. To the American this Nicholas tour may not seem of any importance, but here in Europe it is ranked next to the Prince Henry tour. The contestants had to cover a total distance of 1,791.3 miles in 9 days of actual road work, which shows an average of 199 miles daily.

The rules of the tour were almost identical to those which regulated the Prince Henry tour and thus it is not so surprising that among the forty-six cars which started twenty-seven were Germans and nearly every one was a specially-constructed Prince Henry tour car. Of the solitary American car entered, a Ford, it must be said in its favor that it was a very light car and belonged in the second section of contestants which include five other light cars, of which only one, a Benz, finished. There were five Russian cars in the tour, of which four finished—two Russo-Baltique and two Optima. The two Italian cars which started, a Fiat and an Itala, finished, as did four of the five French cars, consisting of two Delaunay-Bellevilles, a Berliet and an F. L., which was driven by the chauffeur of Czar Nicholas. Two British cars, a Siddeley and an Austin, finished, as did a Belgian Pipe.

PRINCE HENRY RESULTS

Berlin, July 11—At last the official results of the 1910 Prince Henry tour have been made public by the Imperial Automobile Club. Comparing the 1910 and 1909 tours it shows that this year there were 127 entrants, 119 contesting cars, eighty-six cars which finished, thirty-two which dropped out and one which was disqualified, while last year there were 113 entrants, 108 starters, ninety-two which finished and only sixteen which dropped out.

As for the individual car records, they show that out of the twenty Opel cars which started this year seventeen finished and sixteen received either a prize or a plaque. Out of the twelve Benz cars which started ten finished, and these ten cars all secured prizes. Of the nine Mercedes which started eight finished and won prizes. Eight out of the ten Austrian Daimlers finished and five won prizes, among which were the first, second and third highest awards. Adler, which had eight, had seven at the finish, all of which took prizes. Of the three British Vauxhall cars which started three finished and two won prizes. Only one of the three Fiat cars which started finished this year. The only Benz Sohne car which started this year finished and was a prize winner.

The official returns for the two speed trials which were held over a course in each instance of 3.4 miles show that in the first race Ephraim, in an Opel, the winner, averaged 84.2 miles an hour; Spitzner, in a Benz, second, 83.1 miles an hour, and Dr. Kiefer, in a Benz, and Fritz Opel, in an Opel, both third, 82.3 miles an hour. In the second speed trial Porsche, the winner, averaged 81.99 miles an hour with his Austrian Daimler. Ephraim, in the Opel, was second, having averaged 81.88 miles an hour; Fischer, third in an Austrian Daimler, averaging 80.91 miles an hour, and Nenney, in a Benz, fourth, averaging 80.17 miles an hour.

ENGLISH LIKE PRINCE'S IDEA

London, July 16—Although the Society of Motor Manufacturers is opposed to reliability trials, it has endorsed the proposed international reliability team match between England and Germany for the Prince Henry trophy. King George also has endorsed the idea, being especially pleased because of the amateur angle. The Royal Automobile Club recently discussed the proposed rules, and there seems to be no doubt but what the match will be made. As outlined, the international reliability will have fifty cars on a side, all members of the Royal Automobile Club and the Imperial Automobile Club of Germany. The competition will be confined to amateur owners. It is not necessary that the Germans shall drive German cars or vice versa. The winning club will be the one with the fewest points against it. The observers will be military officers. Each day's journey shall not exceed 150 miles. Each car will carry two flags, one British and one German, of equal size. On the German cars the German flag will be on the right and the British on the left, and on the English vice-versa. English cars will carry the odd numbers. Bonnets will be sealed and can be broken only by the observers. One point will be charged each 5 minutes or part thereof lost in repairs, but tire troubles will not count. There will be no speed trials or hill-climbs. Homburg is suggested as the start of the tour. The cars then would proceed in 2½ days to Bremerhaven, from which port they would be shipped to Southampton, from which point a tour through England would be taken, winding up at London, where there will be a big celebration in honor of the event.

BONDS FOR NEW YORKERS

New York, July 26—Announcemnt was made today by the Automobile Club of America that arrangements have been made with a bonding company whereby bail bond will be furnished by the club to members free of charge. The club will also provide the services of an attorney in cases where members are arrested charged with violation of the motor laws.

The Readers'

EDITOR'S NOTE—In this department Motor Age answers free of charge questions regarding motor problems, and invites the discussion of pertinent subjects. Correspondence is solicited from subscribers and others. All communications must be properly signed, and should the writer not wish his name to appear, he may use any nom de plume desired.

WIRING FORD FOR LAMPS

OKETO, KAN.—Editor Motor Age—Can electric lights be run direct from the magneto on a model T 1909 Ford car? If so, what voltage lamps would it require?—Henry C. Waters, Jr.

It is claimed that light has been obtained for the lamps of a Ford car by wiring it, as hown in Fig. 1. A primary wire P is lead from the magneto terminal T at the top of the flywheel housing to the primary terminals on the lamps L as indicated. A ground wire C connected to the ground terminals of the lamps is then attached to some portion of the engine or car having good metallic and conductive contact with the cylinders. Eight-volt lamps would be required.

GETS TOO MUCH OIL

Fort Morgan, Colo.—Editor Motor Age—I am driving a model T Ford, and wish to make some provision for a constant supply of lubricant to the crankcase. The present system lubricates freely when the case is filled properly wtih oil—in fact, too freely, as the exhaust plainly shows. If by some method I could keep the supply level just flush with the lower test-pet-cock, the engine would get sufficient oil, but not so much as to cause a smoky exhaust and so frequent a necessity for cleaning the carbon from the piston and cylinder heads, exhaust valves and seats. But to keep the level at this height I must frequently add small quantities of lubricant. Would a plain pint drip sight-feed lubricator tapped into the crank or flywheel case be satisfactory in this regard? If so, how many drops per minute should be fed? Would a mechanical force-feed oiler be necessary for this, or can Motor Age suggest a satisfactory plan of any other nature?—E. W. Gardner.

Any of the methods which you suggest would be satisfactory if properly arranged and adapted, but there are other methods which are said to have been successfully employed in similar cases which may be more conveniently or satisfactorily carried out. You might put a valve in the pipe which conducts the oil from the flywheel to the forward end of the case, or, if you desire to take the chances, you might follow the example of one owner and crimp this pipe slightly with a pair of pliers and reduce the flow through it in this manner. Another method is to knock out and remove the baffle plate, P, Fig. 1, and thereby reduce the level in the crankchamber. If the smoking still continues cut the dips off the connecting rods. Go easy, and remember that it is easier to remove than to replace. If you use a drip-feed lubricator to replenish the supply, experience alone will enable you to learn the proper rate of feed to the crankchambers.

RIVER-TO-RIVER ROAD

St. Louis, Mo.—Editor Motor Age—Much has been said of the river-to-river road across the state of Iowa, and this road demonstrates what can be done when people devote part of their time to actual work instead of all of it to explaining what can be done, etc. I want to ask the motorists of Missouri why cannot we have a road from St. Louis to Kansas City—the metropolis of each state—and one starting from the northeastern part of the state, say from Hannibal and intersecting the route decided upon somewhere near the central part of the state? The Missouri farmer is every bit as progressive as the Iowan; the famous King drag is no stranger to them, but for the lack of organization it is not used to the extent that it would be if an organized system was perfected.

Let the motorists of the state get together and blaze a trail. Go among the farmers living along the proposed route and interest them, and in a short time we will have a highway of which we will be proud.

Missourians, I appeal to you. Let us get together and have a highway across the state of which we will be proud. Let us have a road so that if we wish to take a trip to the next town that we can start with the assurance that we will not get stuck in a mudhole and have to await the pleasure of some one with a husky pair of mules to extract us from our unpleasant predicament. Let us have a road that the motorists in the east and the motorists in the west will say to his friend, "When you make a trip be sure and cross Missouri, for there you will find an excellent road." I see no reason why we cannot have such a route. It is true it will take some work to signboard it and to interest the people who live on it, for without their support it would be useless to attempt it. But what has been done in Iowa can be done here. Let us get busy. D. S.

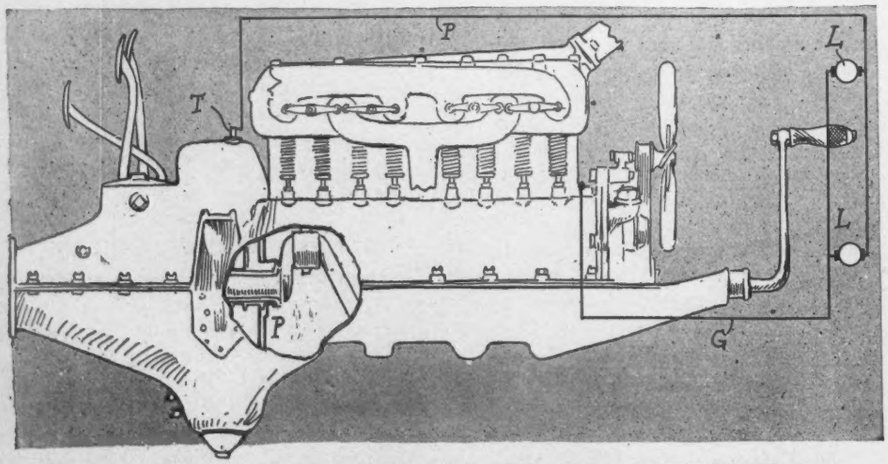


FIG. 1—FORD POWER PLANT SHOWING WIRING FOR LIGHTS AND OIL BAFFLE PLATE.

WHY THE WATER BOILS

Clairton, Pa.—Editor Motor Age—Will Motor Age kindly give me an explanation of the following troubles? I own a model 17 Buick, fitted with 1910 Schebler carbureter. I ran it 526 miles and only got 7 to 8 miles per gallon of 68-proof gasoline. I had the carbureter adjusted and am getting 16 miles now, but my radiator boils as soon as I stop my engine, and before it did not do this. I am sure that the only change made was in the carbureter. I never left the car while it was being adjusted. The water pump is working, explosions are regular, except slight explosion when starting the engine going down grade with the clutch in, a slight explosion in the muffler after allowing the clutch to stay in and drifting with no spark. There is plenty of power; will take any hill, high gear, and the car carries five people. There is no leak any place; starts on compression 3 out of 5. But as soon as I stop the water boils over the radiator for half a minute, losing about ½ pint of water through the overflow pipe. Thirty miles in these hills takes over a quart of water. Can I do anything, or will it hurt anything? A Locomobile owned by a friend here goes 100 miles on ½ pint of water.—Ira Simmons.

Your motor trouble is either due to late ignition, or an impediment in the circulation in the cooling system. Test the ignition and see that the mark in the revolving segment of the magneto distributor registers with one of the stationary contacts when the piston is on dead center. It is possible that the gears of the magneto may have to be set ahead one or two teeth. Your trouble might also be due to the fact that you are not keeping the spark lever far enough advanced. This lever should always be carried as high as possible with-

Clearing House

EDITOR'S NOTE—To the Readers of the Clearing House columns: Motor Age insists on having bona fide signatures to all communications published in this department. It has been discovered that the proper signature has not been given on many communications, and Motor Age will not publish such communications, and will take steps to hunt down the offenders of this rule if it is violated

out causing a preignition knock. If the ignition is found to be in good shape it might be well to clean out the radiator. Almost any of the boiler compounds on the market which are obtainable from any of the engineers' supply houses may be conveniently used for cleaning scale or deposits of lime from a radiator. If you prefer to make your own compound, dissolve 2 pounds of crystals of soda to each gallon of water contained in your cooling system. Put it in the radiator, run the motor for a few seconds so that the solution is well distributed throughout the system, let it stand over night and then flush out early in the morning with clear water. See that there is a free and unobstructed flow of water from the outlet of the radiator and test the flow of water through the entire system by disconnecting the hose which conducts water from the cylinders to the radiator, and then, while the motor is running, and while one person is replenishing the supply in the radiator, see if the water flows freely through the system. After having thoroughly cleaned the cooling system, the lubrication system should also receive some consideration. It is possible that the supply of oil in the crankcase is inadequate or of an insufficient quantity or the oil may be old and perhaps dirty and lost some of its lubricating qualities. With the carburation, ignition, cooling and lubricating systems in good order, there should be no boiling out of the water.

GASOLINE PROBLEMS

Saylorsburg, Pa.—Editor Motor Age—Through the Readers' Clearing House will Motor Age kindly answer the following questions?

1—I was told by a friend of mine that if one had a pail full of gasoline and dropped a lighted cigar into it that the gasoline would not ignite, unless there was a flame. How is it?

2—How is the horsepower of gasoline engines figured—that is, with the bore and stroke or with the piston displacement mentioned?—R. Luther Snyder.

1—It is quite true that if a lighted cigar is thrown into a pail full of gasoline nine chances out of ten the burning cigar would be extinguished; but if the gasoline is of a good quality and quite volatile and the cigar dry and inflammable, it is possible that as it dropped through the air into the pail of gasoline the burning leaves of tobacco would be fanned into a flame and ignition would take place.

2—According to Robert's formula for gasoline engines, which is:

$$\frac{D^2 \times L \times N \times R}{18{,}000} = \text{Horsepower}$$

Horsepower may be found by squaring the diameter, D, or bore of the cylinder, which is multiplying it by itself, times L, the length of the stroke, times N, the number of cylinders, times R, the number of revolutions per minute of the crankshaft. Relative to approximating the horsepower of a car from the piston displacement, Motor Age would refer you to a lengthy article on the subject given on pages 74 and 75 of January 6 issue.

DEMONSTRATES HIS THEORY

San Francisco, Cal.—Editor Motor Age—The photograph Fig. 2 is of my Mitchell car, which I have rebuilt for the purpose of demonstrating the feasibility of a certain method of suspension. This has more than satisfied by expectations. The light wear on tires was a great surprise to everyone. It has run 1,500 miles since I rebuilt it, and the tires scarcely show any wear. The heavy upthrow, so annoying in the regular car, is entirely prevented in the tonneau of the car, as illustrated, with the four rear wheels. The skidding propensities have disappeared.—C. F. Rodin.

SEELY IGNITION SYSTEM

Reno, Nev.—Editor Motor Age—If consistent, will Motor Age kindly reply to the following questions through the Readers' Clearing House?

1—To what particular principle of electricity does the Seeley high frequency ignition system depend upon for its operation?

2—What is meant by placing condensers across the spark plugs of a jump-spark system?

3—What is the approximate voltage and amperage turned up in a good high-tension magneto?

4—In a battery system?

5—Does the voltage and amperage increase in a magneto with an increase in its speed? If so, does the increased abruptness of the break at the contact points of the circuit breaker serve in any manner to increase the E-M-F?

6—Does not the chief point of efficiency of a magneto lie in the efficiency of the interrupter at all speeds?

7—In remagnetizing field magnets of a magneto, what is the best procedure? Is it necessary to establish the previous polarity of the poles and then wind accordingly?

8—What material difference in construction is there between a Bosch or any other high-grade magneto used in low and high-powered or low and high-speed motors?

9—Relative to applying a magneto—Bosch—to a two-cylinder motor cycle at 55 degrees from each other. How is it possible to apply and time it to such an angle between cylinders? I refer to armature timing.

11—Detailed specifications of any of the 4 by 10-inch single-cylinder voituretts of France and Oldfield's Benz.—William R. Harlan.

The principle upon which the Seely ignition system is based is simply that of induction, or, to be more correct in this case, double induction; that is, the primary current of say 6 volts from the battery or low-tension magneto generator is first passed through an induction coil which steps it up or transforms it into a semi-high-tension current of perhaps 5,000 volts, then it passes through a distributor to another induction coil or resonator, as it is called by the manufacturers of the Seeley system, which is attached directly to the spark-plug; in this resonator the assumed current of 5,000 volts is again induced to the 15,000 or 25,000-volt current which may be required to give a good ignition spark. As indicated in the wiring diagram of the Seeley, which is shown in Fig. 3, the current is obtained from a battery or magneto generator and enters a primary non-vibrator coil carried in a regulation coil box



FIG. 2—C. F. RODIN DEMONSTRATING FEASIBILITY OF FOUR REAR WHEEL SUSPENSION

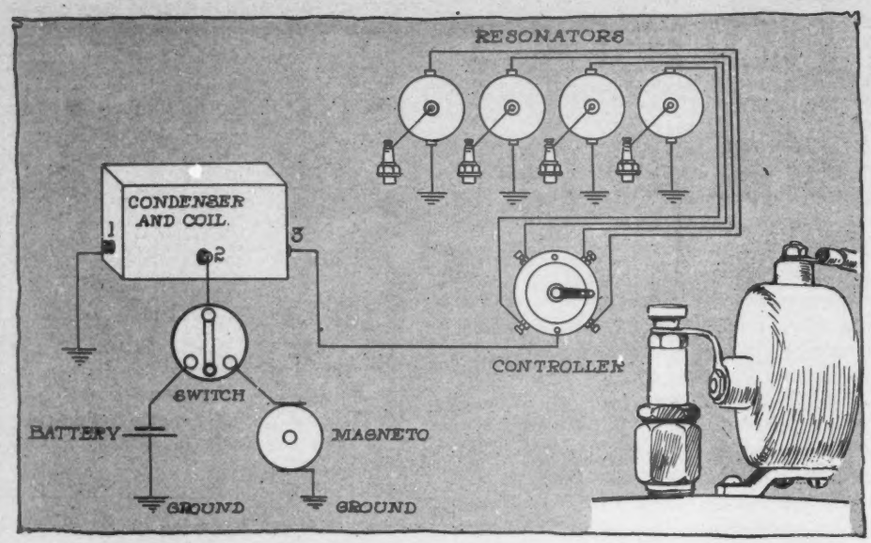


FIG. 3—WIRING DIAGRAM OF SEELEY IGNITION SYSTEM AND RESONATOR ATTACHMENT

and having within the box a condenser in parallel with the coil. From this the current is led through a single wire to a roller type of commutator or controller on the motor and from this four wires lead to four resonators on the cylinders, one for each spark plug. Each resonator is a cylindrical fibre-cased chamber approximately 2 inches in diameter and 1 inch long, mounted on top of the cylinder, as at A. Within each are two windings, a primary of comparatively few turns and a secondary of a vast number of turns, one end of the secondary being connected through a blade spring attachment to the spark plug. The theory of operation of the system is that when the timer is making contact the primary coil on the dash is being saturated, and when the break occurs this charges the condenser, which discharges across the timer gap through the primary of the resonator, and the induced current of high voltage set up in the secondary of the resonator passes to the plugs. Using a small resonator coil on the top of each cylinder eliminates all high-tension insulation.

2—By placing condensers across the spark plugs of a jump-spark system is meant that a condenser is connected up in parallel to the secondary circuit, one end of the condenser being connected to the secondary cable, or the insulated terminal of the spark plug to which it is attached, and the other end of the condenser being grounded on the engine; the condenser forming a shunt around the points of the spark plug. Fig. 4 is given to indicate the arrangemnt of a condenser as above described.

3—At an average speed of say 600 or 800 revolutions per minute a good high-tension magneto of a fair size will give off a current of from 15,000 to 25,000 volts, and a rough guess at the amperage would be about 1/10 of an ampere.

4—In a battery system the voltage of 4, or 6 volts from the battery, at the same average rate of speed, would also be stepped up to from 15,000 to 25,000 volts, but the amperage would perhaps be increased to ½ ampere, or thereabouts, the amperage varying greatly with the design, construction and adjustment of the system.

5—Yes. The efficiency of a magneto does

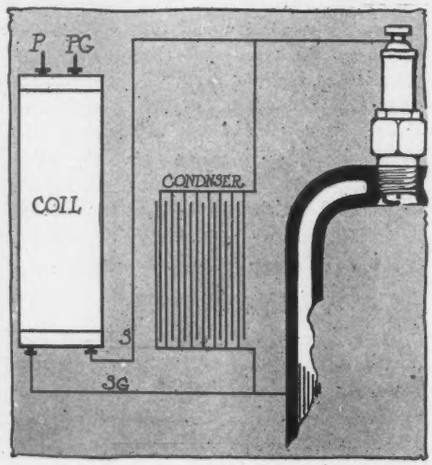


FIG. 4—CONDENSER ARRANGED ACROSS PLUG

increase as the speed increases, and the abruptness of the break of the primary circuit serves to increase the electro-motive force.

6—Providing the other features of a magneto's construction and design are of equally high efficiency, it might be said that the chief point of its competency lay in the efficiency of the interrupter. Of course, if the terminals of a magneto with an excellent interrupter are such that they cannot be kept tight, the magneto would give constant trouble, regardless of the efficiency of the interrupter; and if there were no facilities for absorbing the high-tension current when a secondary cable becomes disconnected from a spark plug and the secondary winding of the magneto destroyed, it is plain that the interrupter or circuit breaker is not the only important feature of a magneto that must be of efficient design and construction.

7—Although it is not absolutely necessary to establish previous polarity in remagnetizing magnets, it is by all means most practical, and they should be wound accordingly. A special apparatus for recharging magnets is shown in Fig. 5, and consists of two cores, C and C1, with plates, L, at the top ends and a large base plate, B, into which the bottom ends are secured, this entire construction being of the same soft iron material. Around the cores many turns of wire are wound, as indicated, the wires being wound in opposite directions, so that the current will flow in the direction of the arrows to establish opposite polarity in the two poles. With an apparatus of this sort a magnet can be readily magnetized in perhaps less than a minute by simply rubbing it across the end plates of the pole pieces several times. Where considerable remagnetizing of magnets is done an apparatus of this kind is quite practical, but where a job of this kind rarely comes to hand, satisfactory results may be obtained by winding a hundred turns or more of wire around the poles of a magnet in the same manner in which they are wound around the cores of the device above described, and the current then passed through the wires.

8—The material difference in construction of the various types of high-grade magnetos is in the design.

9—The Bosch company has a special patented method of altering the construction of the armature core and pole pieces of their magnetos so as to render them adaptable to motors whose cylinders are inclined at an angle. Details of these alterations will be given in a following issue. The winding itself remains unaltered.

11—Owing to the general interest in the progress that is being made in France in the construction of the long-stroke, single-cylinder voiturettes, a special article has been prepared for Motor Age, which will appear in another part of this issue. Detailed specifications of Oldfield's Benz are given in the answer to the inquiry from Joseph Jorden.

FIRING ORDER

Connersville, Ind.—Editor Motor Age—Will the Readers' Clearing House inform me why in a six-cylinder motor firing 1-3-5-2-4-6 would not be superior to the present

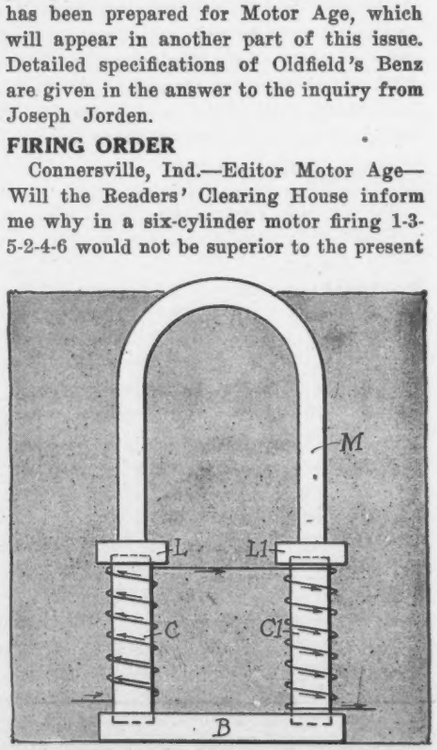


FIG. 5—DEVICE FOR RECHARGING MAGNETS

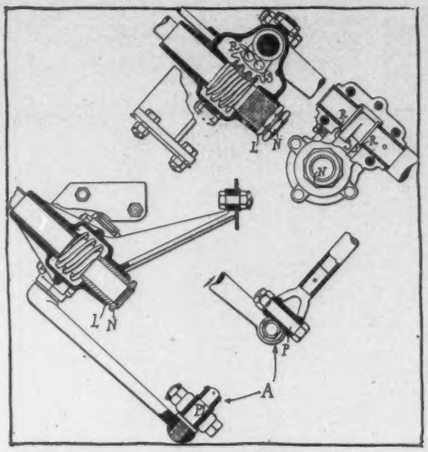


FIG. 6—E-M-F STEERING GEAR.

order used by all makers, which is, I think, 1-5-3-6-2-4, since a crankshaft much easier made and better balanced could apparently be used with the first order of firing mentioned?—R. T. C.

Although a crankshaft with two throws together and each pair disposed at 120 degrees, such as would be employed for the timing 1-3-5-2-4-6, as you suggest, would perhaps be easier made, it would not be better balanced. For, as one authority states in answering a similar question relative to a four-cylinder motor, "it would present a more variegated array of contortions per minute than the average Egyptian dancer would dream of in a year." Almost all six-cylinder crankshafts are similar in construction, as far as the distribution of the throws is concerned, but there are several different arrangements of the firing order of the cylinders. Some motors fire 1-3-5-6-4-2, as does the Pierce-Arrow; others fire 1-5-3-6-4-2, as in the English Napier; the Matheson and the Thomas fire 1-4-2-6-3-5; and the Mitchell 1-5-3-6-2-4.

ADJUSTING STEERING GEAR

Union City, Tenn.—Editor Motor Age—Please advise me through the Readers' Clearing House as to whether or not the steering gear of an E-M-F car can be so adjusted as to take up the lost motion in the steering rod; the lost motion is in the worm and sector; if it can be accomplished, please advise me as to the way to go about it.—W. M. Miles.

Jackson, Tenn.—Editor Motor Age—Will Motor Age advise me, through the Readers' Clearing House, as to the following?

1—Is there any way to take up the lost motion in the steering wheel of an E-M-F 30 car? The lost motion seems to be somewhere in the steering post.

2—Is there any way to drain off the old and used oil from the crankcase in the above named car, without removing the crankcase?—Novice.

1—In Fig. 6 detailed drawings of the E-M-F steering gear are shown. In order to take up the lost motion it will first be necessary to find out where the lost motion is. If it is in the steering connections, the joints of the steering rods at the knuckles and steering arms, etc., one of which is shown at A, it may be that a new pin P will have to be fitted. This might also be the case with the pin P1. It is also possible that adjustment of the thrust bearings of the steering worm is necessary. This will require that you loosen the lock nut L, tighten up the nut N, both of which are at the lower end of the steering column; the nut N should be drawn up until the steering column begins to turn hard, then loosen just a trifle, so that the steering column will not turn hard and the lock nut L again tighten up. It sometimes happens in remote cases that the rivets, R, loosen up so that there is lost motion between the sector S and the shaft to which the steering arm is attached. To learn whether or not this is the cause of the trouble, disconnect the steering rod which runs from the steering arm to the steering knuckle, from the steering arm, then, while some one holds the steering wheel rigidly, see if there is any lost motion in the steering arm itself by trying to work it back and forth by hand. If these rivets are loose the steering gear should be disassembled at once and new rivets fitted. Other possible but very uncommon causes of lost motion in this feature of the E-M-F cars is that the bushings, B, are worn; that the bolts which attach the steering gear to the frame are loose, or that the teeth of the sector, S, itself are worn.

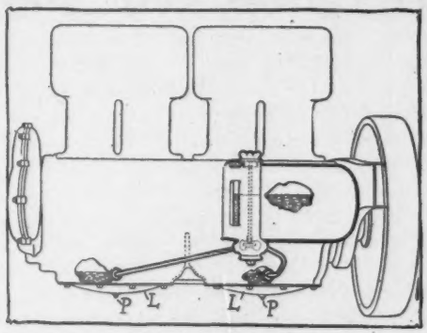


FIG. 7—TO DRAIN E-M-F CRANKCASE

2—A line drawing of the E-M-F motor is illustrated in Fig. 7. The oil may be drained from the crankcase, C, by removing the plugs P by taking off the plates T, any sediment therein may be readily removed, and the contents of the case are quite acessible. To remove the plates, of course, it will be necessary to take down the mud-pan, but the plugs can be removed without going to this trouble. If only the plugs are removed, it would be well to flush out the case thoroughly by introducing a quart or two of kerosene into it after the oil is removed; run the motor for a few seconds, so that the kerosene is pretty well splashed around, then drain it out and refill with the required amount of fresh oil.

LONG ROUTE GIVEN

Cedar Rapids, Ia.—Editor Motor Age—I am intending to tour from this point to Amarillo, Tex. Will Motor Age, through the Readers' Clearing House columns, give me the best route?—Nick Craemer.

Motor Age suggests that you follow the route of the recent Glidden tour. From Cedar Rapids the route lies through Atkins, Newhall, Vanhorn, Marengo, Ladora, Brooklyn, Grinnell, Kellogg, Newton, Colfax, Mitchellville, Altoona, Des Moines, Adel, Redfield, Dale, Monteith, Guthrie Center, North Branch, Brayton, Lorah, Atlantic, Marne, Walnut, Avoca, Minden, Neola, Underwood, Weston, Council Bluffs, Glenwood, Tabor, Randolph, Shenandoah, Tarkio, Burlington Junction, Wilcox, Maryville, Savannah, St. Joseph, Halls, Rushville, Atchison, Lowemont, Leavenworth, Lansing, Wallula, Piper, White Church, Kansas City, Rosedale, Shawnee, Olathe, Wellsville, Ottawa, Waverly, Lebo, Emporia, Plymouth, Cottonwood Falls, Florence, Peabody, Elbing, Wichita. From this point to Oklahoma City the towns passed through are Peck, Wellington, Drury, Renfrow, Medford, Kremlin, Enid, Orlando, Mulhall, Guthrie, Edmond, Britton, Oklahoma City. From this point to Amarillo, Tex., follow the Choctaw railroad due west, and if you will call on the secretary of the Oklahoma Automobile Association, 9½ North Robinson street, Oklahoma City, Okla., he will be glad to furnish you with road directions. Motor Age is informed that the road from Oklahoma City to Amarillo is a most excellent one.

IOWA SIGNBOARDS

Guthrie Center, Ia.—Editor Motor Age—I am sending a photograph, Fig. 8, showing a few signs that have been erected on the river-to-river road through Guthrie country by the Guthrie Automobile Association. The club has erected about seventy signs on this road through the county. These signs are carried on posts 4 by 4 inches square and 12 feet long Our association expects to have a map of this road at an early date.—C. H. Prior.



FIG. 8—RIVER-TO-RIVER ROAD SIGNS

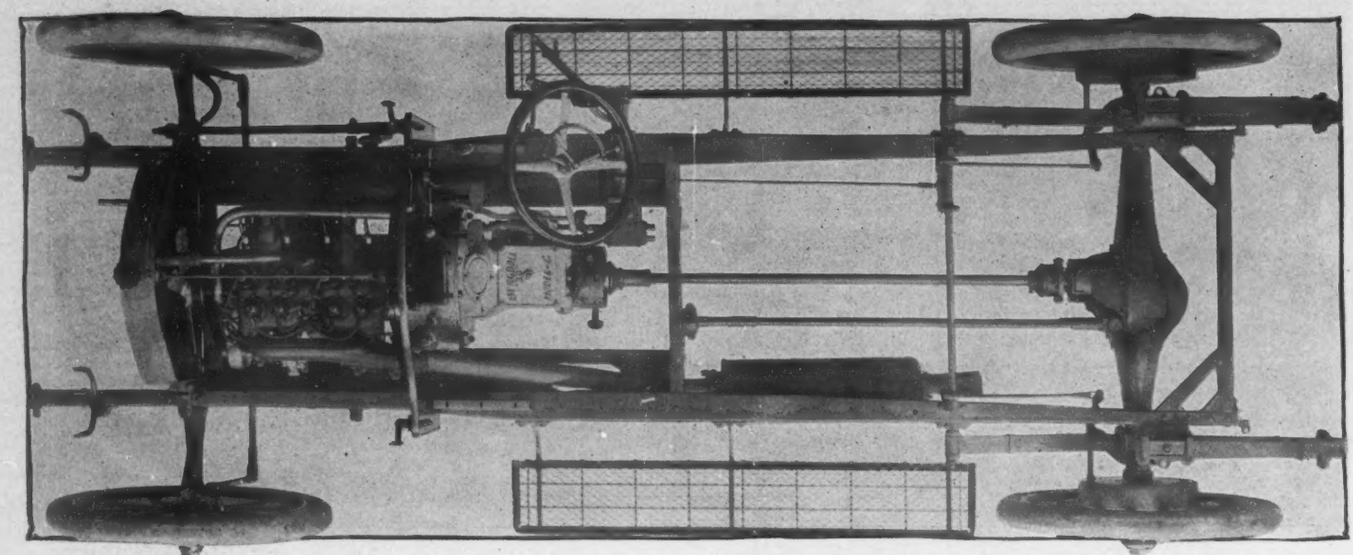


FIG. 1—A PLAN VIEW OF THE 1911 BERGDOLL CHASSIS SHOWING UNIT POWER PLANT AND UNUSUALLY LONG DRIVE-SHAFT

Bergdoll Car Made In Philadelphia

FOR the 1911 market the Bergdoll 30 model built by the Louis J. Bergdoll Motor Co., Philadelphia, Pa., gives promise of being a factor among the medium-priced models, this car being an up-to-date construction in most respects and in addition being fitted throughout with annular ball bearings as well as using alloy nickle, chrome, or vanadium steels in many of its parts. The factory manufacturing it is capitalized at $500,000 and approximately 115,000 square feet are devoted to manufacturing facilities.

The best general conception of the Bergdoll 30 is given in Fig. 1, showing a plan photograph of the chassis, which discloses the employment of a four-cylinder motor, monoblock type, having all of the cylinders formed in one casting, together with an enclosed flywheel with multiple-disk clutch coupled to a selective gearset; the motor, clutch and gearbox forming a unit construction supported on a pair of subframe members. From the gear box a propeller-shaft with two universal joints transmits power to the floating rear axle, the casing portion of which is a pressed steel design. The Bergdoll is made with a 115-inch wheelbase on which are fitted touring car, toy tonneau, roadster, limousine and landaulet bodies, with 34 by 3½-inch tires excepting on the limousine and landaulet which use 35 by 4-inch sizes.

Referring to Figs. 2 and 4 the Bergdoll motor is shown to be a conventional design employing that form of monoblock casting in which the intake valve is mounted in the center of the cylinder head and with the exhaust valves on the left side, one camshaft within the crankcase serving to operate both sets of valves, the exhausts through vertical lifter rods direct and the intakes through lifter rods and rocker arms pivoted to the upper ends of the lifter rods. Placing the intake valve in the cylinder head gives ample scope for using as large a valve as desired as well as permitting of using large exhaust valves in the casting offset. The advantages gained by locating the intake in the head are not limited to the size of the valve, but allows of using practically a spherical combustion chamber in which a big percentage of the explosive mixture is directly above the piston and in which the amount of flame-swept surface is greatly reduced and so the loss through dissipation of heat into the jackets is kept down.



Using a monoblock casting for the motor is gaining in favor in every factory abroad and in a large number of American factories for small and medium-sized motors, the Bergdoll being 4 by 4½ inches bore and stroke, giving a formula rating of 25.6 horsepower. The maker claims that it is possible to make the four cylinder castings in one piece for less than half what it costs to make the four were they cast separately or in pairs.

Using the monoblock casting has not altered the crankcase design, it being a two-part aluminum construction, the upper half carrying the two ball bearings which support the crankshaft as well as taking direct the weight of the cylinders, and all such accessories as magneto, oil pump and water pump to which might be added the unisparker employed in the ignition system. This leaves the lower part to serve merely as an oil reservoir for the circulating lubricating system. Like a few monoblock motors the Bergdoll is a ball bearing one, this type of bearings carrying the camshaft as well as the crankshaft rod bearings.

A symmetrical arrangement of the various motor accessories has been achieved by placing the carbureter with intake mani-

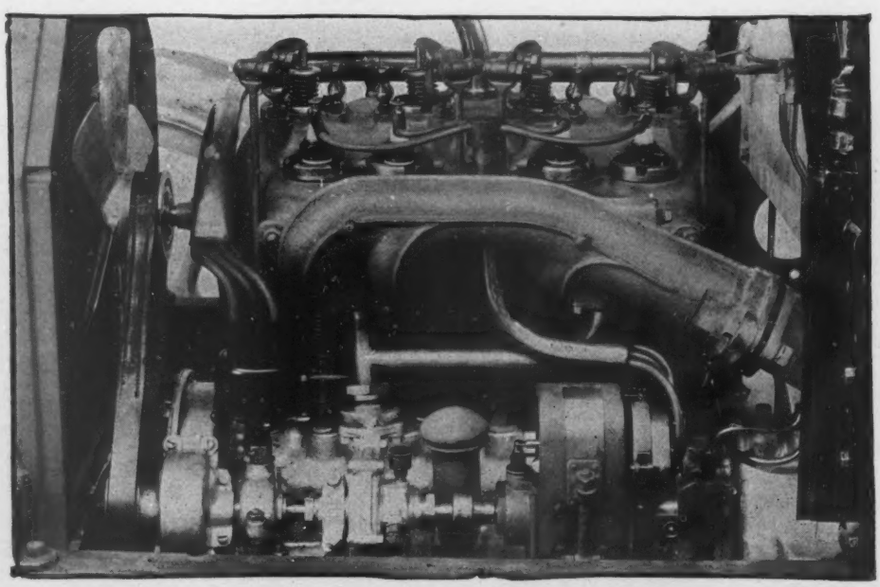


FIG. 2—EXHAUST SIDE OF BERGDOLL MOTOR CONTAINING UNISPARKER, WATER-PUMP AND MAGNETO

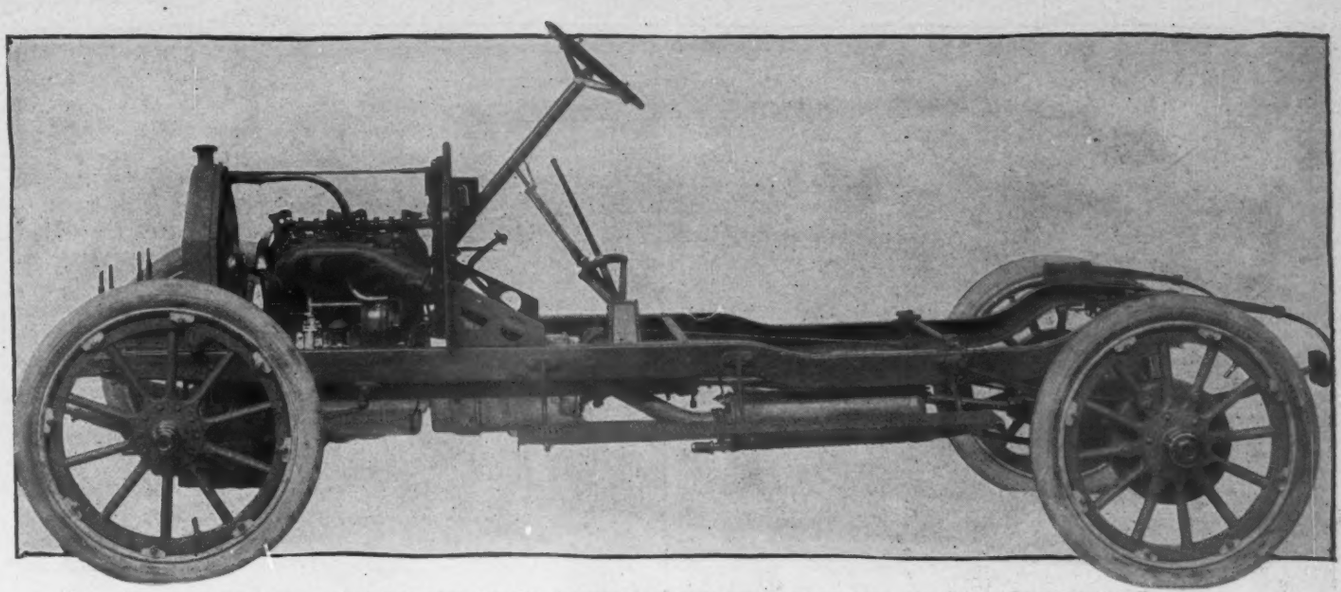


FIG. 3—SIDE VIEW OF 1911 BERGDOLL CHASIS, SHOWING DROP FRAME CONSTRUCTION AND OTHER INTERESTING FEATERES

In the 1911 Medium-Priced Class



fold on the right side and mounting the magneto, uni-sparker, water pump and exhaust manifold on the left. The carbureter is a concentric float feed design employing an auxiliary air valve and having the mixing chamber waterjacketed, with provision for cutting the waterjacket portion out in hot weather. The gasoline supply is 17 gallons in the touring car and 15 in the roadster and toy tonneau.

As standard equipment a battery, coil and Atwater Kent Uni-sparker comprises the ignition system, but for a specified sum a Bosch magneto with separate set of spark plugs is fitted. The magneto plugs are mounted over the exhaust valves, the battery plugs in the cylinder heads at the right. Nothing out of the ordinary appears in the cooling system, which, however, has been given detail attention in many places. For example the entire combustion chamber has been waterjacketed and pains taken to carefully waterjacket the valve seats. The cooling facilities are a Livingston cellular radiator and a belt-driven fan, the latter mounted in rear of the radiator, without any additional fan facilities in the flywheel. A centrifugal water pump is fitted. The oiling system is a circulating one with a gear pump in the crankcase which circulates oil through a single sight feed on the dash, the oil after each circulation being strained. In the crankcase base are cross partitions for maintaining splash oil supplies under the cylinders, this splash oiling the connecting rods bearings, the cylinder walls and piston rings.

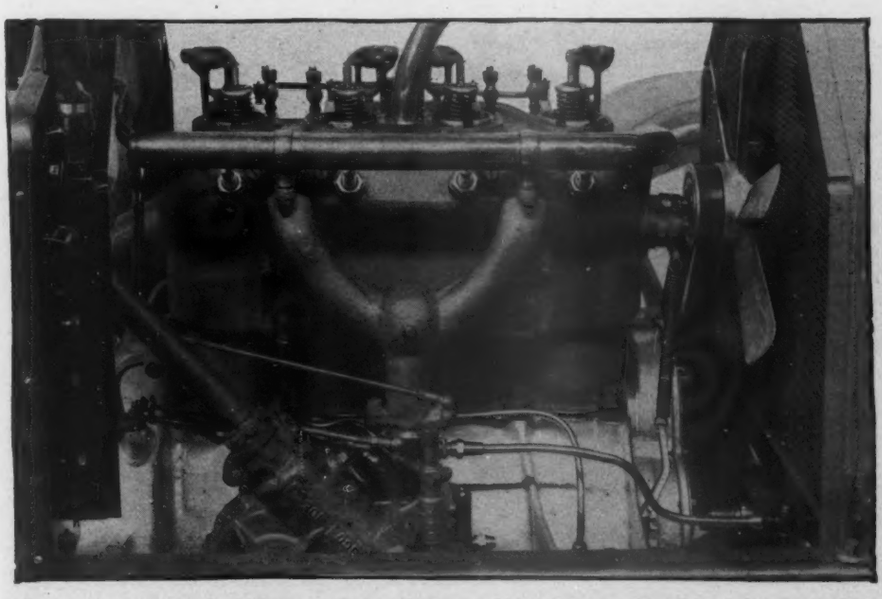


FIG. 4—INTAKE SIDE OF BERGDOLL MOTOR SHOWING SIMPLICITY OF DESIGN AND CONSTRUCTION

Leaving the motor an examination of the transmission shows the multiple-disk clutch to consist of twenty-four disks arranged in two sets and operating in an oil bath. Facilities are provided in the clutch housing for adding oil. The gearset, selectively operated, gives the usual three forward variations and employes nickel steel in the shafts and gears, the usual heat treatment being accorded these parts. Annular ball bearings support both main and countershafts. The gearbox is an aluminum casting with the entire top a cover plate for inspection purposes. The propellershaft is a 3½ per cent nickel steel shaft with a universal at the forward end and another at the rear. The rear axle driveshafts and gears are same grade of nickel steel and in all thirteen annular ball bearings are used, ten being radial types and three thrust bearings. The axle housing, Fig. 6, is a pressed steel job tapering from the spring seatings to the largest-diameter part of the differential housing. Access to the differential is through a large circular cap at the rear.

Care has been bestowed on the braking features of the cars, there being three brakes, a service one on the propellershaft immediately in rear of the gearbox and a pair of expanding brakes acting within rear wheel drums. The service brake is a thermoid lined band 3 inches wide; and the rear wheel brake drums are 14 inches in diameter and 2 inches wide. The rear set is applied through equalizers.

Passing to the running gear of the car attention is first drawn to the pressed steel frame construction in which the side members are made with a double drop, Fig. 3, in the region of the tonneau door which gives a low door for the touring cars and thereby allows of a low carriage of the complete passenger load. The side members are offset at the dash and the channel lips gradually widen from the rear end to the offset, this increasing width adding to the frame strength. Supporting the framework

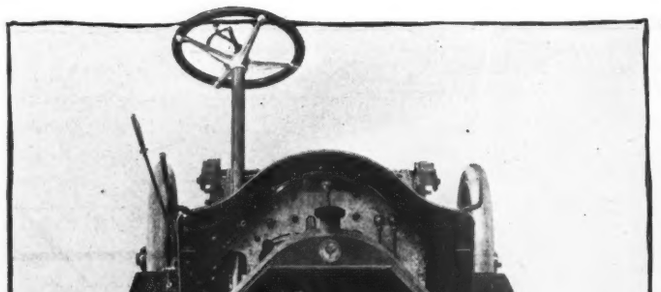


FIG. 5—FRONT VIEW OF BERGDOLL CHASSIS

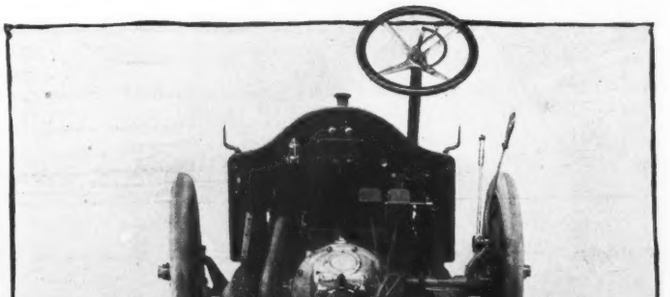


FIG. 6—REAR END OF BERGDOLL CHASSIS

in front is a set of semi-elliptic springs with leaves 2 inches wide, the spring measuring 39 inches in length, and in rear support is in three-quarter-elliptic springs 45 inches long and with 2-inch leaves. The front axle, Fig. 5, is an I-beam forging with Elliot, or jaw, type of steering ends and in these the load is carried on a ¾-inch ball in the upper jaw arm. Steering is through a worm-and-gear steering mechanism with ball thrust bearings fitted. The throttle and spark leverettes are above the 17-inch steering wheel. The car control is standard, there being one brake pedal, one clutch pedal and the accelerator.

CAZES WATER-PROOF MOTOR

To so protect the motor that it can work with a stream of water turned on it, or in the gas-charged atmosphere of a coal mine is the problem that has been studied by the Cazes company, the producers of what they term an armored motor.

In its main features the motor is standard. It has four cylinders in a single casting, Figs. 9 and 10, with unusually large waterjackets and enough space for an ample central bearing. The valves are on opposite sides, with their stems protected by aluminum plates in what has now become a general manner, except that the joints are gastight. All piping has been reduced to a strict minimum, the exhaust and intake manifolds being cast with the cylinders, and each having one connection only; the waterjacket is naturally in one piece.

An innovation is to be found in the carrying of the high-tension magneto in an aluminum housing, consisting of a shallow pan P and a bolted down cover H, the joint being made absolutely gastight. From the top of the magneto housing is a brass tube T carrying the wires to a pocket in the head of the motor in which the spark plugs are protected. At each connection —magneto and plug pocket—a gastight joint is made. The pocket K to receive the plugs is cast with the cylinders, its top being formed by a bolted down plate readily removed from changing or verification of the plugs.

Lubrication is assured by means of a pump worked off the camshaft, oil being delivered through two sight feeds F bolted to a bracket on the upper portion of the motor, and from there to the main bearings and by splash to the connecting rod ends and the cylinder walls. There is nothing original about the carbureter with the exception of a single length of intake piping L to the manifold, and the use of wire gauze to prevent grit passing in with the gas.

When intended for service as a locomotive in a coal mine, only one other condition had to be fulfilled, that is the removal of all danger of fire from the exhaust. This has been accomplished by discharging directly into a tank of water carried for this purpose on the locomotive. In its protected condition the motor could be placed under a hose pipe without its running being affected.

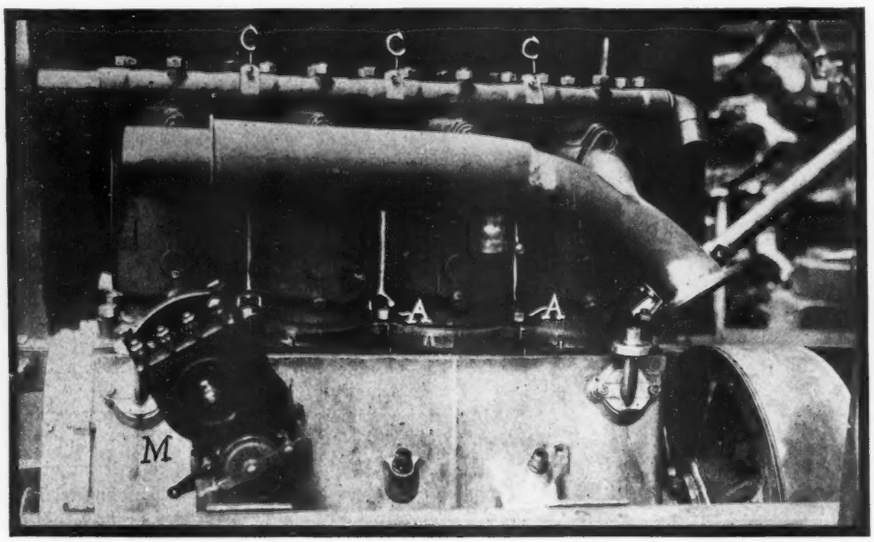


FIG. 7—EXHAUST SIDE OF PANHARD MOTOR, BUILT UNDER KNIGHT PATENTS

PANHARD SLIDE-VALVE MOTOR

Europe is paying a considerable amount of attention to the problem of the rotary and slide-valve motor, as is shown by the production of the Knight motor by the Panhard company, the securing of patents for a rotary-valve motor by the Renault company, experiments at the de Dion-Bouton factory and half a dozen others so much in the experimental stage that it

would not be fair to speak of them at the present time.

The Panhard adoption of the Knight motor has long been expected, for this firm bought up the rights for France as soon as Charles Y. Knight brought his patent across the Atlantic. With Panhard, however, the purchase of a patent does not imply its immediate adoption and before the engineers were satisfied that this motor could be placed in the hands of its customers they had to carry out a series of experiments extending over 2 years. Although convinced of the suitability of the Knight motor the French firm is acting with caution, the Panhard-Knight motor being an addition to and not a replacement of any of the existing types. It is made in one model only, with a nominal rating of 20 horsepower, and will not be adopted for any of the larger or smaller sizes, at least for the season 1911.

The four cylinders of the Panhard-Knight motor, Figs. 7 and 8, are cast separately. They have a bore of 3.9 inches and a stroke of 5.5 inches. This is a higher ratio of stroke to bore than has been adopted by English makers of the Knight motor, but is slighly lower than the usual Panhard practice, the slide-valve motor having a ratio of 1.4 to 1, while three other poppet valve models have a ratio of 1.5 to 1.

Although cast separately, the cylinders are set so close together on their base as to be almost as compact as a monobloc motor. The walls almost touch, and the bases are so close together that one pair of holding down bolts A serves for two cylinders. Being so closely set three small collars C serve to transform the four portions of the outlet water pipe into a single tube. The intake and exhaust manifolds are each a single length, bolted to their respective ports, as shown in illustration.

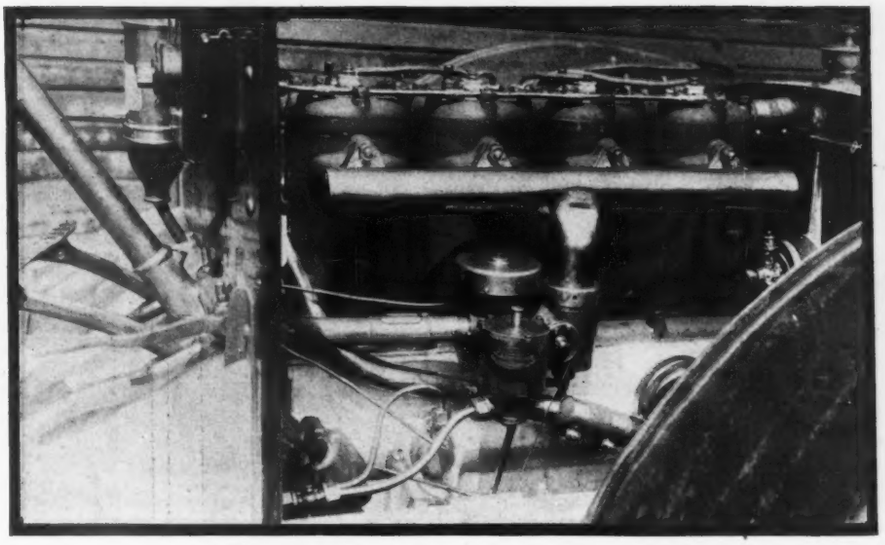


FIG. 8—INTAKE SIDE VIEW OF PANHARD—KNIGHT MOTOR

The layshaft for operating the internal sleeves is carried on the right-hand side of the motor, with drive from the crankshaft by an enclosed silent type of chain. No changes have been made in the essential features of the motor, as designed by Engineer Knight, therefore the separate heads, the internal sleeves and their operating mechanism need not be described. The high-tension magneto M is carried on the left-hand side of the motor, with its shaft at right angles to the crankshaft. It is driven by a transverse shaft between the first and second cylinders operated by a worm gear from the layshaft.

MOTOR CAR LITERATURE

From the Cutler-Hammer Mfg. Co., Milwaukee, Wis., is a forty-eight-page booklet describing its different types of battery charging rheostats. Full-page illustrations show the various types.

The Firestone Tire and Rubber Co. is mailing to the trade a hanger illustrating the manner of operation of its quick-detachable demountable rim.

Apropos of the vacation season comes the touring number of the Packard, the house organ of the Packard Motor Car Co., which has many interesting touring features, among which are the opening story, "The Lure of Death Valley," which tells of J. M. Murdock's trip across the Mojave desert, and "Our Wonderful National Pike." A particularly attractive cover page, which is a reproduction of a drawing by Henry Thiede of one of the famous landmarks of lower California, the summit of the Newhall grades, adds to the attractiveness of this touring issue.

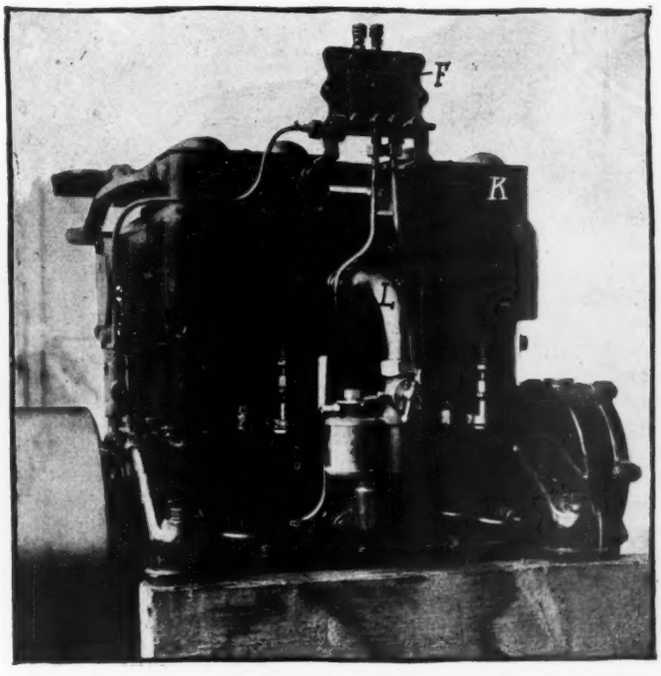


FIG. 9—RIGHT SIDE VIEW OF CAZES WATER-PROOF MOTOR

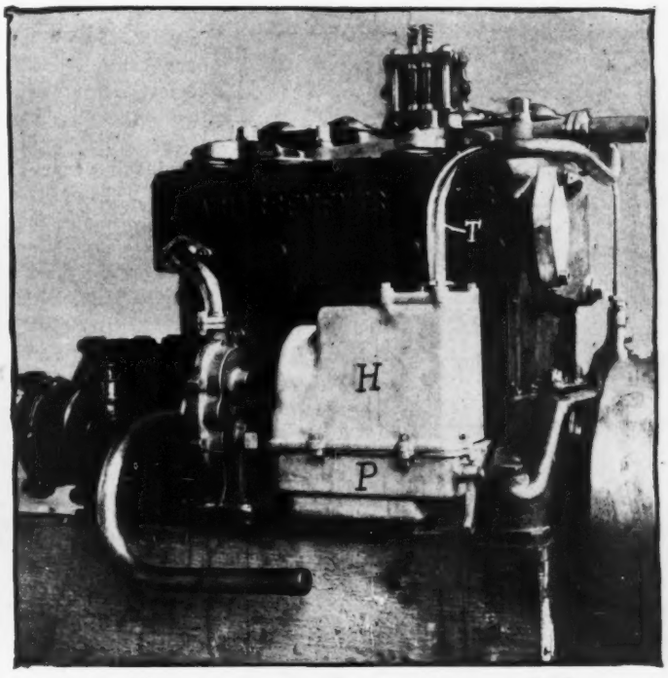


FIG. 10—LEFT SIDE VIEW OF CAZES WATER-PROOF MOTOR

LONG-STROKE MOTOR DESIGN IN FRANCE

IN VIEW of rapid developments, it is hard to say what constitutes a long-stroke motor. It is all a matter of comparison. When it was a practice to make the stroke no longer than the bore a motor with the stroke one and one-quarter times the bore was designated a long-stroke motor. Today it would be considered decidedly short. The movement towards lengthening the stroke first began in France; it is in that country that the greatest developments in this direction have been made, and where the tendency is strongest towards long strokes for ordinary commercial models.

The start of the movement can clearly be traced to racing. Nearly 3 years ago racing authorities, with the conviction that everything was to be gained by lengthening the stroke of motors, declared that bore should be limited and stroke left unfettered. The obvious result was that the stroke was increased in extraordinary proportions. Incidentally this upset some of the old formulæ, cars being produced which, under the present Royal Automobile Club of England rating, should develop a fraction over 6 horsepower being really capable of producing almost 30. The last French grand prix and the English 4-inch race are both instances of the development of long-stroke engines as the result of racing rules. In each case the races were abandoned before full knowledge had been obtained from their rules. It is only in the small-car class that a full opportunity has been afforded of developing the long-stroke motor to its utmost limits.

Getting Greater Horsepower

For this class of cars the limitations were 3.9 inches for a single-cylinder, 3.1 for a twin, and 2½ inches for a four-cylinder motor. Given these dimensions, the problem was to get the greatest horsepower. At the outset the single-cylinder was preferred, designers being of the opinion that they could get greater power out of one large cylinder than out of four smaller ones. Although this reasoning has proved correct in practice, there now is a decided tendency towards the construction of long-stroke fours in place of singles, although the latter never have been beaten in a pure speed test.

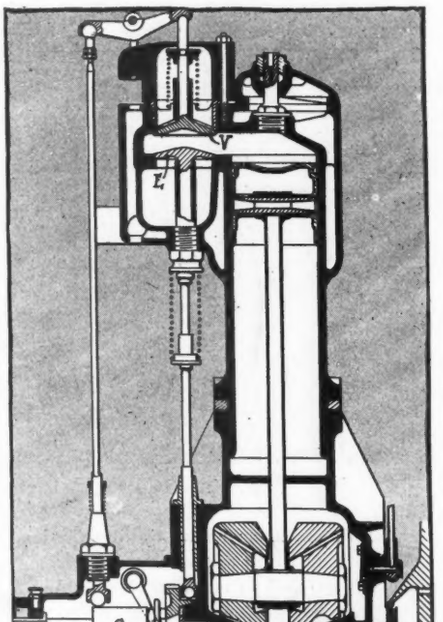


FIG. 1—SIZAIRE LONG-STROKE MOTOR

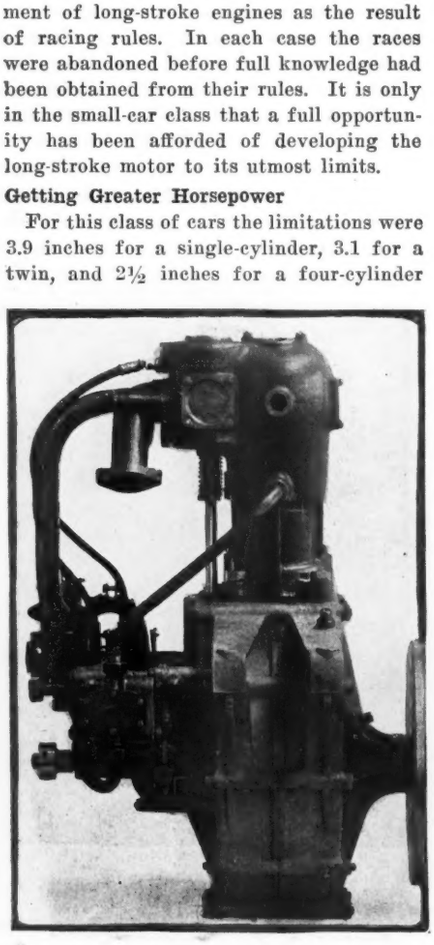


FIG. 2—LION-PEUGEOT V MOTOR, 3.1 BY 7⅛

Only three or four firms have specialized in this class of long-stroke motor. Prominent among them are Sizaire-Naudin and Lion Peugeot, with de Dion-Bouton as the producer of motors only, and a number of smaller firms as rather timid followers. To take the Sizaire-Naudin as an example, the first year the 3.9 single-cylinder had a stroke of practically 6 inches; the second year this was increased to 7⅛ inches; the third year it became 10 inches, and the standard touring cars were given a stroke which had formerly only been thought suitable for racing. Up to the present then, a ratio of 2½ to 1 in stroke to bore has been considered the limit. This is what is adopted on the Sizaire-Naudin singles, the Lion-Peugeot V-twins—80 by 200 milimetres—and the de Dion-Bouton special racing motors. It was generally believed that this was the practical limit, but one of the firms mentioned above has now on the testing bench a motor in which the stroke is three and one-half times greater than the bore. Out of deference to the constructor, who is preparing a surprise, particulars must be withheld, but it is permissible to state that the motor, with its official rating of 6 horsepower, will develop nearly 40, that it will run at 2,500 revolutions a minute and throttle down to lower than 200.

A Single-Cylinder Type

Fig. 1 shows the single-cylinder Sizaire-Naudin type, which up to the present has proved the most successful in racing. Its dimensions are 100 by 250 millimetres—practically 3.9 by 10 inches. Except in the proportion of stroke to bore and the use of ball bearings for the crankshaft, there is not much difference between this model and standard motors delivered to ordinary users. The cylinder is a close-grained casting mounted on a cast steel crankcase divided vertically. It will be noticed that the valves are superimposed in an outstanding pocket. Their diameter is considerable —75 millimeters, or three-quarters of the piston diameter. Trouble was at first experienced with the warping of such large valves, and it was to obviate this that the Lion-Peugeot company adopted a type of motor with three inlets and three exhausts in the cylinder head. After one season's unsatisfactory service metallurgists made possible the production of a valve which could be guaranteed to work under racing conditions without any danger of a breakdown. Since then valve failures have been rare. The operation of the exhaust valve E is according to standard practice. The

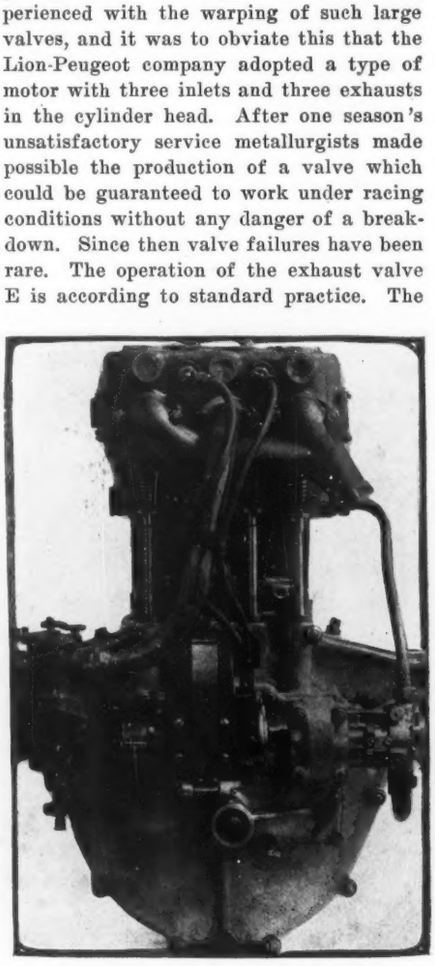


FIG. 3—LION-PEUGEOT TWIN MOTOR

intake V, on the other hand, is operated by a vertical pushrod and an overhead rocker arm, and has a variable lift. The intake cam C is capable of being moved on a squared shaft by the operation of the steering wheel lever or the foot accelerator. For ease in starting, the valve is prevented from closing completely; as it is desired to increase speed the cam is moved along its shaft until the maximum lift is obtained. There is no control on the throttle. The inlet valve is seated on its housing by means of a steel headpiece screwed down on to three projecting bolts, and also provided with a lip to receive the link to which the rocker arm is pivoted. By unscrewing three nuts the complete intake valve can be lifted out with the use of no other tools than a wrench.

Features of the Engine

The crankshaft is carried on ball bearings. Reciprocating parts are made as light as possible, the piston being machined out of a steel bar and only fitted with a single compression ring. There is a slight leakage, but this becomes negligible at high engine speed. The engine develops its full power, about 30 horsepower, at 2,300 revolutions a minute, which gives a piston speed of a fraction over 19 meters a second, or 3,740 feet a minute. The A. L. A. M. rating being based on a piston speed of 1,000 feet a second, it readily can be seen why this car, which under that formula should develop 6½ horsepower, in reality gives more than three times that power. As is apparent from the drawing, compression is very high. A considerable advance is given to the exhaust valve opening, this generally being 60 degrees, with a lag to the closing of 20 to 30 degrees. The intake valve only opens 35 degrees after upper dead center and closes 20 degrees after the lower dead center.

Ignition on these motors is invariably by high-tension magneto, with a fixed starting point advanced as far as possible. Even

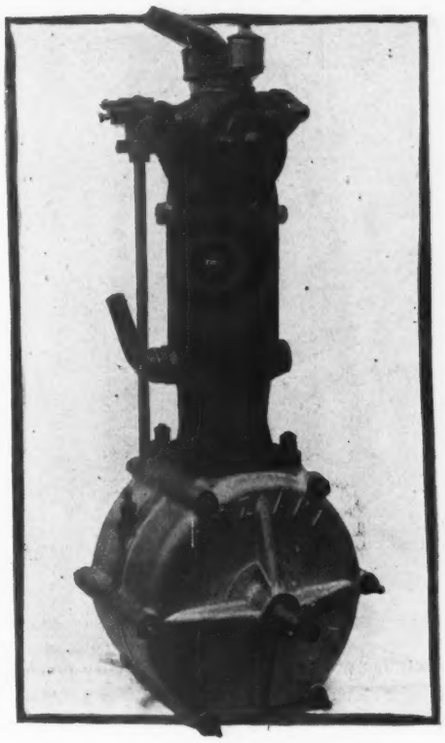


FIG. 4—ANZANI MOTOR

on the touring type of motor Sizaire-Naudin adopt fixed ignition with a great advance, only allowing retard to be used for stopping the motor. In order that drivers may not run with a late spark the lever is placed in an inaccessible position. In some cases, notably on the Delage motor, which won the last voiturette grand prix, two plugs are fired simultaneously in one cylinder. Storage batteries never are used, not even as a standby. Indeed, it is more common to carry two magnetos, a double platform being used and the spare magneto being ready to interchange with its companion in case of necessity. If two plugs are not being fired together a spare one is fitted, ready to receive the terminal if the first one breaks down. Racing experience has shown that there is no sooting up of the idle plug.

Castor Oil for Lubricating

It now has become a general rule to employ pure castor oil for lubricating these special racers. Credit for the introduction of this lubricant is due to George Sizaire, of the Sizaire-Naudin racing team, who found castor oil gave better results for his high-speed motors than any other oil. It has become so generalized that now all French aviation motors, with hardly an exception, run on pure castor oil, and it also is very extensively used on large racing cars. Incidentally, private owners who have had trouble with smoky exhausts use castor oil for service in Paris. As the law only makes it a crime to smoke, and is silent about disagreeable smells, castor oil users are satisfied. Except in a few special cases the lubrication of the single-cylinder long-stroke motors is by splash.

Obviously, with a motor of 10-inch stroke, internal flywheels, 16 inches diameter, and an overhead valve mechanism, the height of the bonnet must be considerable. The Sizaire-Naudin illustrated measures 42 inches from base of crankcase to top of inlet valve rocker arm. The bonnet for such a motor, together with the ordinary type of radiator, would offer a considerable head resistance. To reduce this to a minimum, the radiator, consisting of plain vertical copper tubes, has the form of a sharp angle V, and is not more than 6 inches in width across the front. The tubes pass into a top and bottom collector, the upper one being of large capacity, in order to give a good head of water, for the flow is by thermo-syphon. The bonnet, very narrow at the front, where it joins the radiator, gradually widens until it finishes in a scuttle dash. Only the driver's head projects above the level of the bonnet, while the mechanic, laid fully on his back, is altogether hidden.

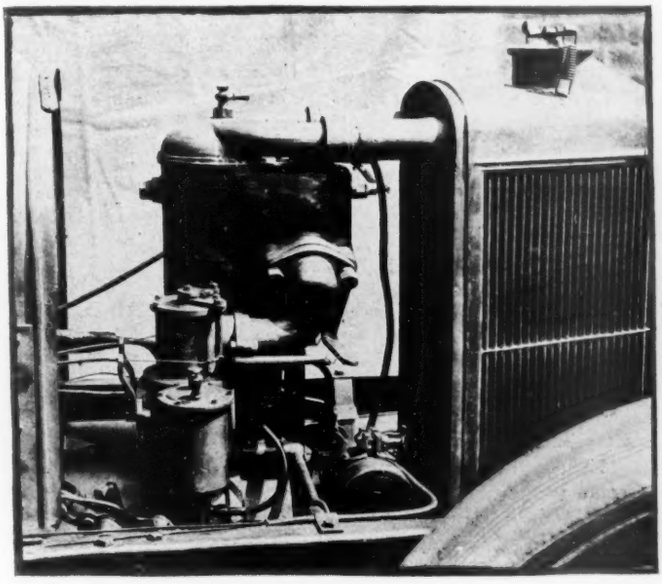


FIG. 5—DE DION MOTOR, 4 BY 10 INCHES

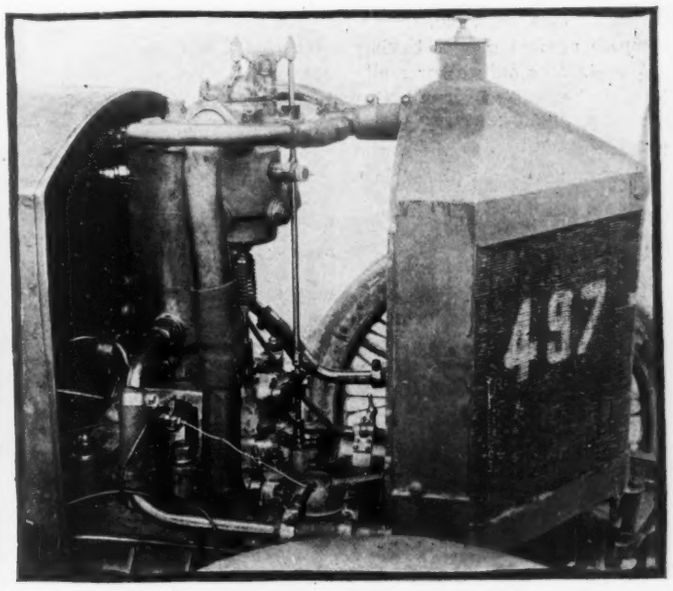


FIG. 6—WERNER MOTOR, 4 BY 10 INCHES

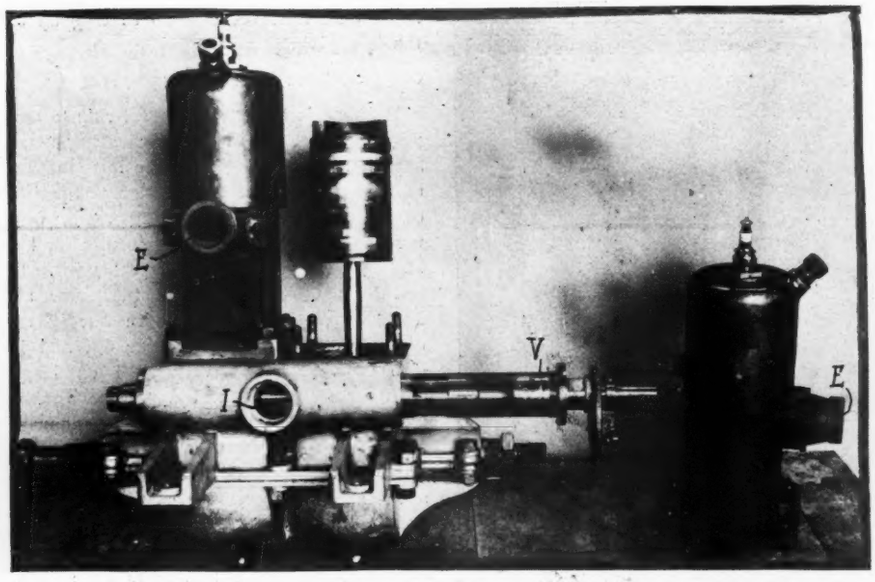


FIG. 7—DELOCHE TWO-CYCLE MOTOR WITH ROTARY VALVE

There is nothing particularly distinctive about the transmission and drive of these cars, the majority having propellershaft, but the Lion-Peugeots, as an exception, employing side chains.

Long Strokes in Fours

It is only quite recently that the tendency towards very long strokes has been made manifest for four-cylinder cars. Undoubtedly, however, the present season will show some remarkable developments in this branch of motor construction. At the present time the greatest ratio of stroke to bore on a four-cylinder motor is 3.07 to 1, employed on the new Hispano-Suiza racers built for the French voiturette race at Boulogne-sur-Mer, next fall. Estimating on an engine speed of 1,800 revolutions a minute, this gives a piston velocity of 2,755 feet per minute. As the Boulogne course is a hilly one, a four is believed to have an advantage over a single, although it has not been able to prove it up to the present. This year, too, they will have to compete against singles having a ratio of 3½ to 1. The only other really successful long-stroke motors are the Gregoire, with 2.3 to 1, dimensions 3⅛ by 8⅛, and the Labor-Picker, of exactly the same size.

Undoubtedly cars placed in the hands of ordinary users will shortly have very much longer strokes than at present. The reform movement has begun among small constructors, or rather constructors of small cars. Thus, Sizaire-Naudin has a series of fours under construction with a ratio of 2.4 to 1—2.7 by 6.6 inches. Luc Court, a Lyons firm, builds a nominal 10-horsepower car with a bore of 2.7 and a stroke of 5.5, or a ratio of 2 to 1. Among the big makers of France the ratio is lower, although the tendency is to increase it. Thus Renault has a model with a ratio of 1.6 to 1; Delahaye has several long stroke models with ratios of 1.7 to 1.8 to 1. At present the majority of leading French makers have not adopted a stroke greater than one and one-half times the bore.

Luc Court, a French Motor

As an example of the European tendency in the construction of light cars, the Luc Court, a Lyons production, is decidedly interesting. It is one of the popular type of cars, so much sought after in England and France at the present time, with a nominal rating of 10 horsepower, very light on tires, economical of oil and gasoline, and as accessible as possible.

The motor is a four-cylinder, monoblock type, with a bore of 2.7 inches and a stroke of 5½ inches. This is the highest ratio of stroke to bore—two to one—yet adopted by French makers for a purely commercial type of car. It is not, however, the last to have this length of stroke, several other French builders being on the point of bringing out motors with a ratio of not less than two to one. The crankshaft is carried on two large ball bearings, the shaft being entered from one end of the case and inspection plates provided in the base of the chamber; there is no horizontal division of the crankcase. Forged steel pistons are employed, each one weighing 13 ounces complete with rings. The connecting rods also are steel forgings, as light as possible consistent with strength. Valves are on one side and superimposed, the intakes being over the exhaust. This allows of the smallest overall length of the motor and the greatest possible diameter of the valves, with the result that the cylinders never are starved and are cleared quickly of spent gases.

A single camshaft operates all valves, the exhaust by direct action and the intakes by means of very light vertical push rods P Fig. 10 and equally light rocker arms R. The vertical push rods are in pairs, passing through the valve pocket and the vertical bolt B receiving the single nut N by which the manifold, Fig. 12, holds the valve cage on its seat. Thus, to dismount all four valves there only are two nuts to unscrew, the rest of the mechanism coming away without the use of any tool. As the motor runs at 1,500 revolutions a minute, suction plays a considerable part in the opening of the intake valves, which explains the very light nature of the operating mechanism. The rocker arms and valve stems are enclosed by a couple of aluminum covers C, merely clipping into position.

The carbureter employed is known as Minimax, being a patented type. It has two jets, one being used for slow running and the other for full power, the two never being in operation together. It allows of pure air being drawn into the cylinders when desired. Three-point suspension is employed for the motor, the single forward bracket of the crankcase being mounted on the front transverse frame member, and the two rear arms on the side frames. Although rated at 10 horsepower only, the

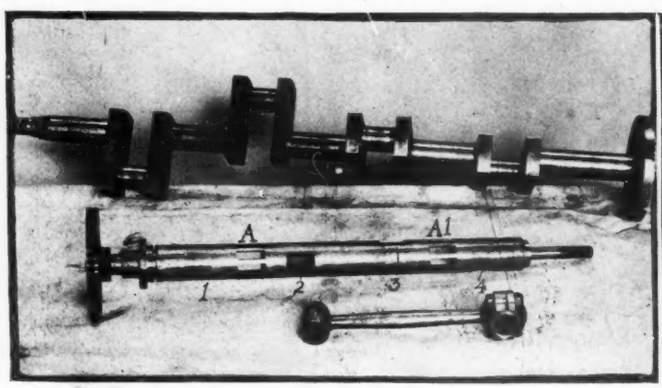


FIG. 8—DELOCHE CRANKSHAFT, ROTARY VALVES, AND A CONNECTING ROD

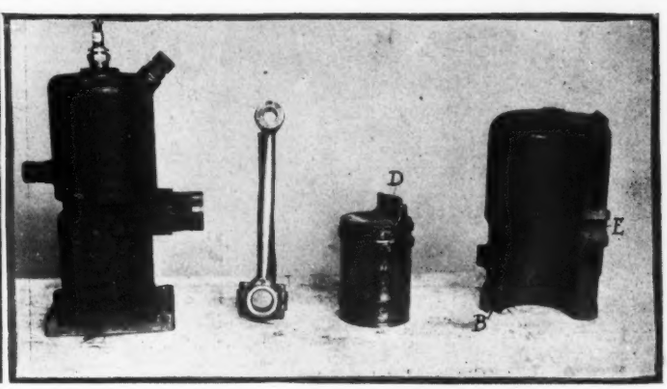


FIG. 9—CYLINDER, AND PISTON DESIGN IN DELOCHE MOTOR

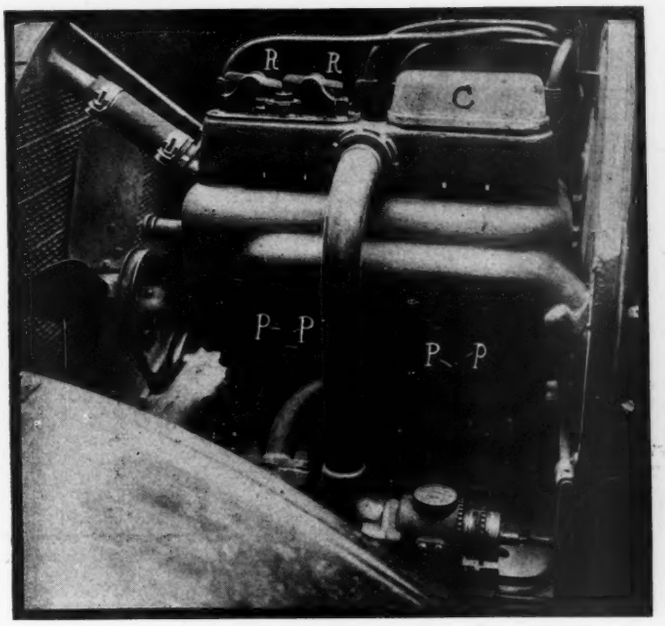


FIG. 10—LUC COURT FOUR-CYLINDER MOTOR

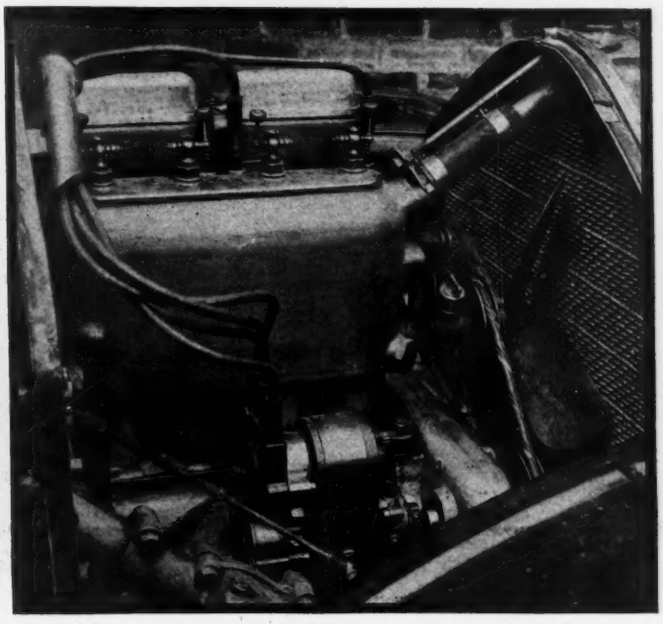


FIG. 11—LUC COURT MAGNETO LOCATION

little motor brakes 20 without difficulty.

Clutch is of the cone type, the only peculiarity being that the fly-wheel is of considerable diameter. The car is distinctive by reason of the use of side chains instead of propellershaft. The usual objections to the chain have, however, been removed by placing them in oil-tight cases.

Uses Rotary Intake Valve

A two-cycle motor with a rotary intake valve has been placed on the market by the French engineer, Georges Deloche. In all but one feature the motor conforms to standard practice. It has four or two vertical cylinders of 3.9-inch bore and 5.5-inch stroke, with copper water-jackets, pump circulation, ignition by high-tension magneto, a five-bearing or three-bearing crankshaft and exhaust through a port uncovered by the piston at the end of its downward course.

The peculiarity of the motor is that a rotary valve V Fig. 7 is carried in the position usually occupied by the camshaft on a four-cycle motor, and like this is driven by spur gears from the mainshaft. The rotary valve Fig. 8 is a rather large diameter hollow shaft provided with six openings or ports. Two of these A and A1 extend entirely around the circumference of the shaft, leaving just the necessary amount of metal required for strength, whereas the four others 1, 2, 3 and 4 are of smaller dimensions. The two large openings A and A1 communicate with the intake piping and at all times provide a free opening from the carbureter to the interior of the shaft. The four smaller openings each correspond with an intake port admitting to the interior of the four separate crankcase divisions. On the upstroke of the piston the openings in the rotary valve register with the intake ports, allowing a charge to be drawn in through the hollow shaft and compressed within the crankcase against the closed valve on the downward course of the piston. As in the majority of two-cycle motors, a by-pass B— Fig. 9 is provided by which the charge already compressed in the crankcase can be passed into the combustion chamber on the port being uncovered as the piston nears the end of its stroke.

The same principle applies to the two-cyinder model, the rotary valve in this case, however, having but three openings, one in constant communication with the carbureter and the two others giving admission into the crankcase division at each revolution. On the single-cylinder model the inventor makes the crankshaft fulfil the functions of rotary valve. The shaft is hollow and is cut away for a portion of its circumference to give a free opening from the intake pipe. The charge passes through an intake port in the crankcase to the interior of the case, where compression takes place on the downward stroke of the piston.

In Fig. 7 E shows the exhaust passage from each cylinder and I the intake port between the rotary valve housing and the carbureter. It will be noted at D Fig. 9 that the usual deflector on the piston head is made use of.

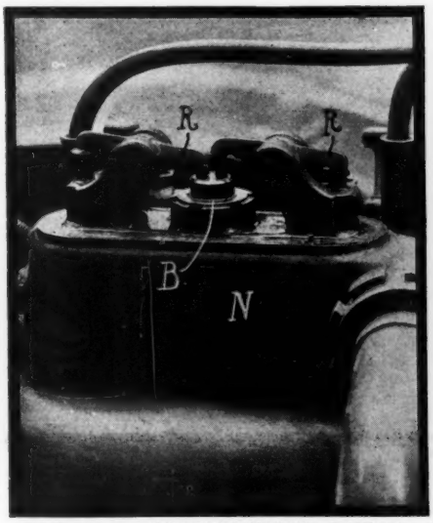


FIG. 12—LUC COURT VALVE LOCATION

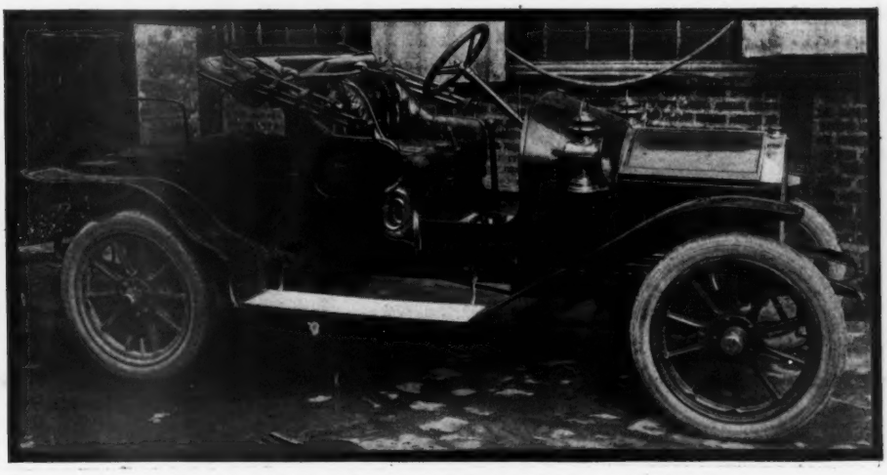


FIG. 13—THE LUC COURT FOUR-CYLINDER CAR, 1,250 POUNDS

NEW RENAULT TRUCK

AN addition is about to be made to the Renault line by the production of a 5-ton truck, driven by a nominal 25-horsepower motor. The first of these are now undergoing a test in service for a Parisian transportation company and will doubtless be produced in series before the end of this year. Louis Renault has sought to adhere to the main lines of his touring cars. Naturally a 5-ton truck differs considerably from a two-cylinder runabout, but the difference is one of size and strength of parts more than of principles of construction. The motor employed is a recently-produced colonial type, having four-cylinder 110 by 160 millimeters bore and stroke —4.3 by 6.2 inches. The ratio of stroke to bore is 1.45 to 1, which is at present only exceeded by one other French constructor, who makes a four-cylinder model of about the same weight, with a ratio of 1.77 to 1. The motor, carried forward under a bonnet in the usual Renault manner, rests on two transverse members. Valves all are on one side, with the carbureter on the right-hand side of the motor and the magneto placed in front and at right angles to the motorshaft. Cooling is by thermo-syphon. A fan mounted on the periphery of the flywheel draws a current of air through the tubes of the radiator and disperses it at the rear. A complete undershield, while protecting the organs from dust, prevents the air entering except through the radiator tubes.

Lubrication of the motor is assured by a dashboard lubricator worked off the camshaft and delivering oil through sight feeds to the motor bearings, to the gearcase and to the differential. It is probable, however, that before the finished car is put on the road lubrication will be under pressure to the main bearings and through a hollow crankshaft to the connecting rod ends. It has been decided to adopt this type of oiling for all the Renault touring cars.

The standard type of Renault inverted cone clutch is employed, taking the drive to a four-speed gearbox. Final drive is by propellershaft to a special type of rear live axle, which is the only organ differing materially in design from the standard touring cars. The rear axle, Fig. 1, is a steel forging F forming a cradle in the center, and tubular at each extremity to receive the drivingshafts. The differential D is a separate organ mounted within the cradle, and bolted to the upper and lower branches of the axle forming this cradle. The design gives a remarkably robust axle while making the weight very much less than would be possible with the standard type of rear axle housing sufficiently strong for this work. A couple of triangular tube torque stays A and B are used, being attached at the rear at each side of the differential housing, and at the front to transverse frame members, in practically the same way as on the touring cars.

The rear axle is carried on heavy semi-elliptic springs, the forward ends of which are attached to a forged dumb iron riveted to the frame, and the rear linked up to a transverse frame member carried underneath the longitudinal frame members. A perfectly straight steel girder frame is employed with suitable transverse members of the same section. Steel-shod wheels are employed both front and rear, this being the only Renault vehicle that is not mounted on either pneumatics or solid rubber tires. The total overall length of the truck is 18 feet 6 inches by 7 feet 6 inches in width. The total weight of the truck is 3¾ tons, and the useful load it is capable of carrying is 5 tons.

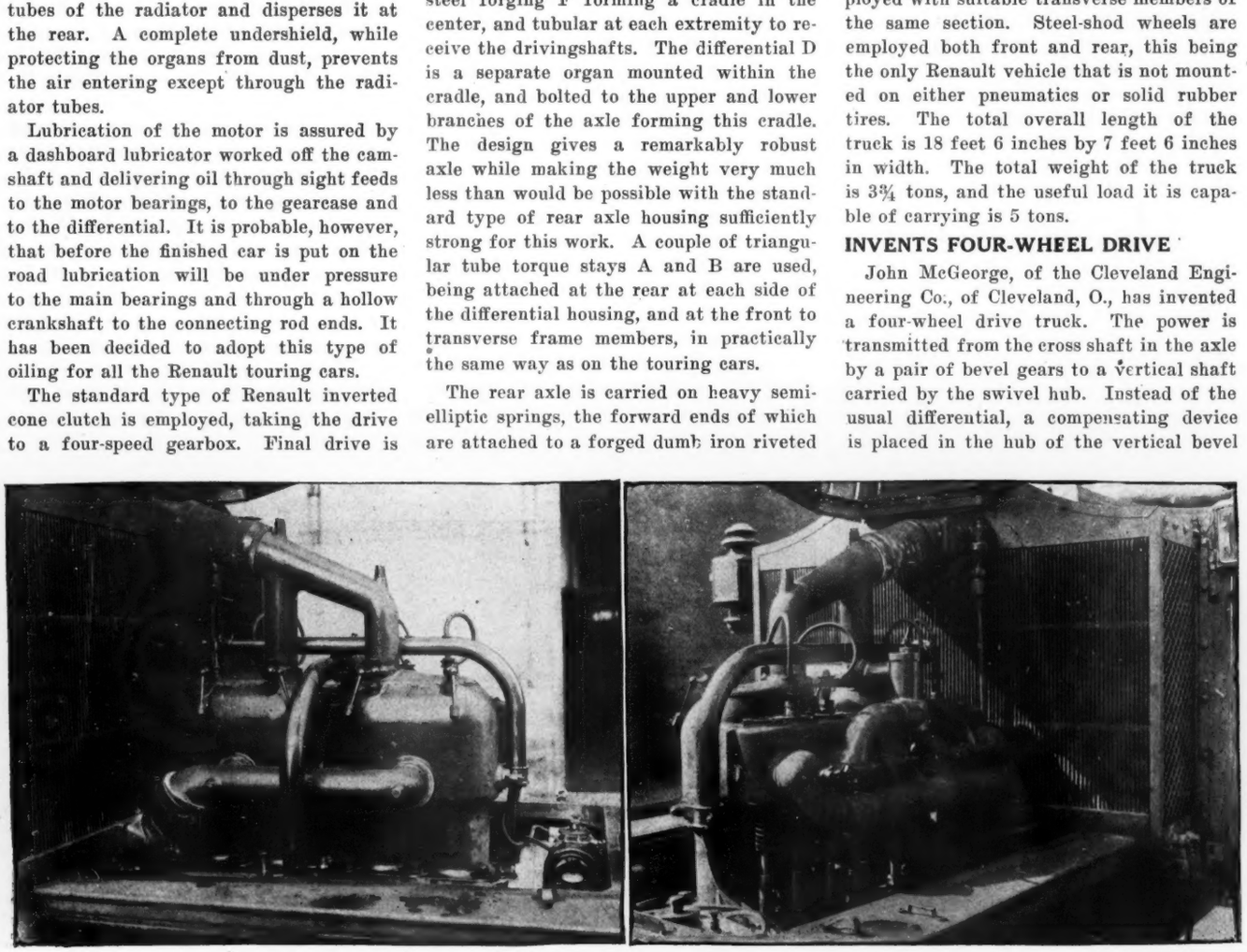
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SIDE VIEW OF RENAULT 5-TON TRUCK

INVENTS FOUR-WHEEL DRIVE

John McGeorge, of the Cleveland Engineering Co., of Cleveland, O., has invented a four-wheel drive truck. The power is transmitted from the cross shaft in the axle by a pair of bevel gears to a vertical shaft carried by the swivel hub. Instead of the usual differential, a compensating device is placed in the hub of the vertical bevel



TWO VIEWS OF THE MOTOR THAT IS USED IN NEW 5-TON TRUCK BROUGHT OUT BY RENAULT

Commercial Car

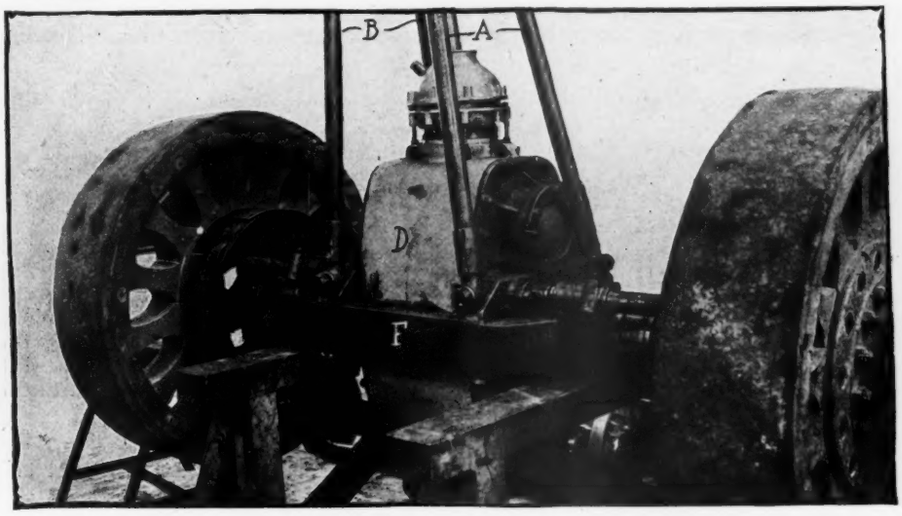


FIG. 1—CONSTRUCTIONAL DETAILS OF RENAULT TRUCK'S REAR AXLE

gear. This compensator permits the wheel to coast ahead of the power in either direction, but only ahead of the power. It prevents the wheel from running backward downhill when the power is in the forward gear. In coasting downhill the wheel can be stopped either by the reverse gear or by the brakes. The fact that the hub does not rotate but turns about a vertical center line through the wheel makes possible the steering of the driven wheel. The McGeorge patents have been acquired by the Cleveland Motor Truck Co., recently formed with a capital of $250,000 to manufacture commercial trucks, using the McGeorge wheel. McGeorge has been retained by the company as chief engineer.

GERMANS USE MOTOR VANS

An interesting use of motor car vans is made by a wagon factory at Munich, Germany, transporting the new railway cars manufactured at the premises to the railroad station. The vans used in this connection are 38-horsepower Büssing motor cars of the standard type subventioned by the German army hauling a trailer on which the wagon is loaded. In Fig. 2 is represented the transport of a three-axle mail van of a net weight of about 19 tons. In order to provide the adhesion required for the rubber-tired driving wheels of the motor car, this is loaded with 3 tons for the transport of a mail van, and 1.5 tons for the hauling of a goods car. The only special feature of this load train consists of a more substantial coupling device which is connected to the chassis of the motor car close to the axle, being carried downward in an oblique direction so as to utilize the pull for increasing the traction of the rear wheels. This coupling device is a triangular fork fixed sideways by hinges to the chassis, and carrying a traction spring at the summit of the triangle. To this spring is fixed a short traction rod with universal joint.

The trailer is a vehicle without springs, with low iron wheels, the diameter of which is 500 millimeters at the front and 700 millimeters at the rear, the width being 180 and 400 millimeters respectively. The front axle of the trailer is designed—the same as in connection with ordinary trailers—as a rotary pivot. The net weight of the car is 5 tons. The wagons are unloaded upon rails in the following manner: After carrying the trailer above rails fixed at the level of the ground, the motor is stopped in a position parallel with the rails. The wagon then is dropped on the rails by means of sliding rails connecting the trailer with the railway track. It has solved a transportation problem.

KEEPS TAB ON COST

A Springfield, Mass., department store has been keeping close tab on an Oldsmobile delivery wagon it put into operation May 1, 1909, to see whether the vehicle would justify purchasing others. The results have been very gratifying. During the first 8 months of its service the wagon covered 13,700 miles in suburban delivery work with the following record of its performance:

Total number of bundles delivered	27,000
Expense, including storage, oil, parts and labor	$ 368
Tire bill	217
Gasoline	119
Registration	10
Wages	559
Total	$1,273

This gives the average cost of delivery per bundle, roughly as 4½ cents. This is exclusive of depreciation, which the owners figure at 3⅓ per cent per annum, and which would bring the cost per bundle up to 6½ cents. The cost per bundle by horse-drawn vehicles is 9.8 cents.

NEW DELIVERY SERVICE

The Auto Delivery Co., of Portland, Ore., has been organized recently with a capital stock of $35,000 for the purpose of establishing a parcel delivery system for Portland. Ten pleasure cars and two trucks are the initial equipment purchased for the new concern. The company will maintain its garage on Twelfth street, between Stark and Burnside. P. E. Beam is the manager of the organization.



FIG. 2—GERMAN MOTOR TRUCKS OFTEN ARE USED TO HAUL HUGE LOADS—TRANSPORTING A WAGON

From the Four Winds



MUSKOGEE MOTOR CLUB STOPS AT WAINWRIGHT, OKLA., ON A RECENT CLUB RUN

CLIMB for Anderson—The Anderson Automobile Association, of Anderson, S. C., announces a hill-climb for August 5.

Trying Crude Oil—A test is being made of crude oil on North Main street at Antwerp, O. If the test proves satisfactory the streets of the entire city will be treated with the preparation.

Daylight Start Named—The Vanderbilt cup race will start at daylight. The daylight start restores the Vanderbilt cup race to its old-time glory, with the glamor and romance attendant upon the start of the cars as the day begins to dawn.

Moross Quits Speedway—E. A. Moross has resigned as contest manager of the Indianapolis speedway, and will remove to Detroit. Hereafter the track will be managed by a committee which has not yet been named. For the September meet $8,000 in prizes will be hung up.

Recognition for the Speedwell—The promoters of the recent good roads tour from Atlanta to New York have acknowledged their error in not placing the Speedwell, driven by Colonel S. M. Smith, of Bluefield, W. Va., among the prize-winners. The Speedwell, through a clerical error, was rated as a non-contestant, whereas the car went through with a perfect score.

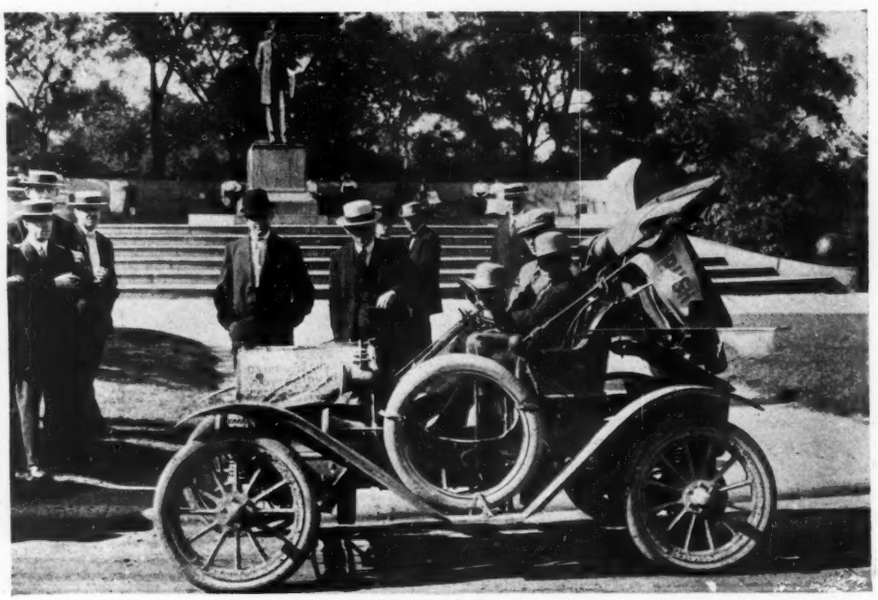
Hill-Climb for Washington—The Automobile Club of Washington, D. C., is planning to hold a hill-climbing contest on August 30, 3 days after the conclusion of the Munsey historic tour. This will mark the first hill-climb in Washington, and it is expected many of the entrants in the Munsey tour will compete. The hill selected is nearly a mile long with a grade of about 15 per cent. It has two turns and it will take careful driving to negotiate them without shutting off the power. The club has another contest on hand that is designed to increase the membership. Charles W. Bender and Claude Miller, members of the club, have been appointed captains of two sides, each drawing an equal number of members of the club, who will work to increase the membership. The side bringing in the largest number of new members will be declared the winner and will be the guests at a dinner to be given by the losing side.

Omaha Club Active—The Omaha Motor Club, of Omaha, Neb., held its first banquet at the Rome hotel last week. Although but a month old, fifty members attended. The subjects of good roading, a mile motor speedway and club endurance runs were discussed. It is planned to hold endurance runs to Sioux City and Chicago.

Stopping 'Frisco Scorchers—The police of Stockton, Cal., have adopted a unique device for apprehending scorchers. The mode of procedure is as follows: A policeman hails the car that is approaching at a faster clip than the law allows, and if the chauffeur ignores him he signals to the patrolman a half block beyond to adjust a 3-foot board bristling with sharp nails and attached to a rope drag for convenience in handling. This is slipped in front of the machine and all comes to grief. The car is fortunate that comes to a standstill with but one tire plugged full of holes.

Another New Indiana Road—The commissioners of Laporte county, Indiana, have awarded the contract for the Cathcart gravel road to W. B. Hutchinson, of Michigan City, the contract price, which was the lowest of four contractors, was $36,350. Work has been commenced on the road and it is hoped that it will be completed by fall.

Blazing Kentucky Trail—The official pathfinding car of the Louisville Automobile Club is on a 1,000-mile trip through southwestern Kentucky. The trail-blazers will map out the route for the second annual reliability and economy contest of the club. The car is a Rambler. The general outline of the trip will be to Elizabethtown, where dinner will be served, and thence to Mammoth Cave, where the sec-



YOUNG ABERNATHYS MAKING OVERLAND TRIP IN BRUSH

ond stop will be made. Glasgow will be the next stop of importance. The other large cities which the tourists will pass through are Lexington, Shelbyville and Lebanon. The run this year is scheduled to take place September 20, 21 and 22.

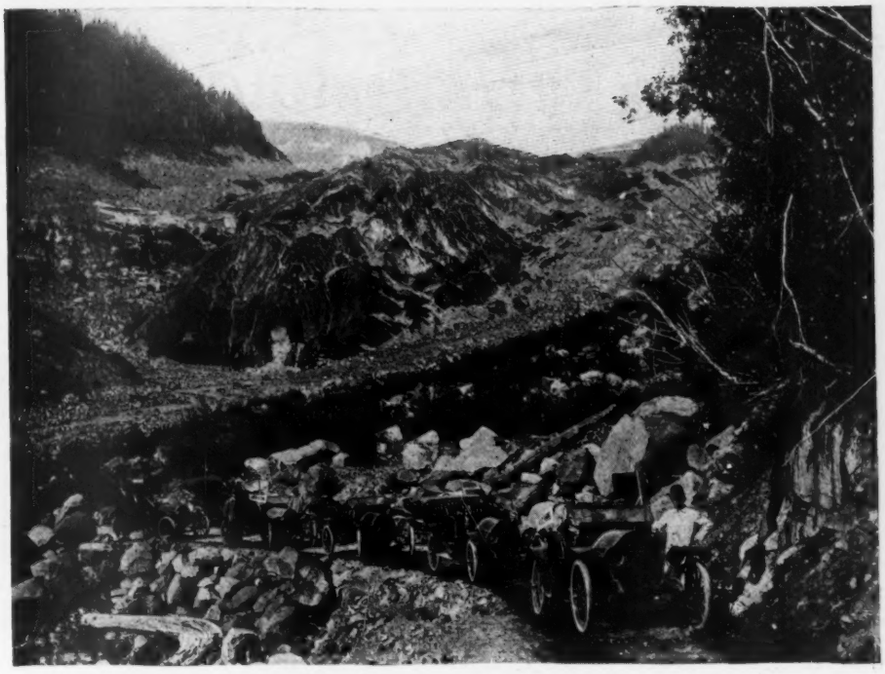
Atlanta Meet Postponed—A terrific rainstorm that came up just before the time for calling the first race made it necessary to postpone for 1 week the races scheduled for the Atlanta speedway last Saturday afternoon. Referee W. G. Humphrey decided that as the drivers were all local men and not especially familiar with speedway racing, it was wise to call off the affair and accordingly did so.

Joining Oregon Association—Clubs in various parts of the state of Oregon are affiliating themselves with the Oregon State Automobile Association, the latest to join being the Tillamook Automobile Club, which now has a membership of twenty. The state association is working on the matter of establishing official garages and hotels throughout the state, and also expects to have emblems out for the cars very shortly.

Inaugural Sweepstakes Portponed—Following the request of a large number of probable competitors and the public at large, the Long Island Motor Parkway has decided to postpone the inaugural sweepstakes meet scheduled for July 30, for which a number of entries had been received. It is possible that this event will be re-scheduled for late in August or early in September, when the ride of travel is large and people are returning to the city.

Another A. A. A. Recruit—An addition to the growing list of southern associations was made at Jackson, Ga., when the Middle Georgia Automobile Association was launched. The objects of this organization are to encourage the building of good roads and the promoting of race meets. The officers elected were: W. H. Mallet, Jackson, Ga., president; Paul Turner, of McDonough, first vice-president; R. A. Franklin, Jackson, treasurer; J. D. Jones, of Jackson, secretary.

New England Road Work—The Massachusetts highway commission is having completed this year about 50 miles additional of state highways that will fill in gaps here and there on through routes and when the work is ended it will be possible to go from Boston to a number of the larger cities without leaving the state roads. These highways radiate from Boston like the spokes of a wheel. The south shore roads are getting much attention and very soon it will be possible to motor from Boston clear to the end of Cape Cod, returning by way of Buzzards Bay, all on state roads except where small villages are passed. The roads running through the center of the state are now very nearly finished, while the northerly ones touching New Hampshire have been completed for some time. New Hampshire has made much progress with its state highways that come down to meet the Massachusetts roads. Maine has taken up the work and appropriated a large sum to construct a decent road from the New Hampshire line through to Portland.



FROM TIDEWATER TO SNOW LINE—WASHINGTON MOTORING OUTING

Nebraska's Count—Up to July 1, 1910, the total number of motor cars registered in Nebraska was 12,080. The number registered during the first 6 months of this year alone was 3,492, or more than half the number registered during the preceding 12 months.

New Road in Quebec—Consul Andrew J. McConnico, of St. John's, reports that the Automobile Club of Canada has entered into an agreement with the farmers along the route for the improvement of the highway from Montreal, via St. John's, to Rouse Point, N. Y. The road extends along the Richelieu river, is lined with good farms and small villages, and is the main road over which motorists and travelers by other conveyances enter or leave Canada from or to the United States.

Norristown a Promoter—The Norristown Automobile Club, of Norristown, Pa., will hold a race meet on the 1-mile race track of the Belmont Driving Club, just outside Philadelphia. The meet is of peculiar interest to Philadelphians owing to the fact that though this famous course has been repeatedly sought for the purpose of holding motor races, officials of the club always have refused to sanction it, claiming that the speeding cars would have a tendency to ruin the track for horse racing. The folly of this idea having been proven to their satisfaction, the race course at Point Breeze being a notable example, the Belmont directors at last have given their approval and if present plans materialize the meet will probably take place Saturday, September 17. T. S. Patterson, of Rosemont, Pa., is the lessee of the track and will be the manager of the race meet.

Counts the Cars—An estimate of the amount invested in motor cars in Kosciusko county, Indiana, shows that between $150,000 to $200,000 is tied up in cars. The city of Warsaw boasts of $60,000 invested.

Detroit's New Club—The newly-organized Wolverine Club, of Detroit, Mich., has held its first meeting and elected the following officers and directors for the current year: President, H. J. Porter; first vice-president, L. H. Collins; second vice-president, H. C. Mills; secretary, F. H. Trego; treasurer, E. W. McGookin; directors, W. G. Bryant, C. J. Gilmour, H. H. Gill, J. W. Cain.

From Tidewater to Snowline—"From tidewater, Commencement bay, to snowline, the Nisqually glacier on Mount Tacoma," was the slogan and trip made by the Hudson car owners of Tacoma, Wash., on Sunday, July 17, when seven of them entered the first experience contest in this part of the country, and successfully ran to Nisqually glacier, 6,000 feet above the sea, and return, a distance of 141 miles, without having occasion to make the slightest repairs.

Muskogee Club Enterprise—The Muskogee Motor Club, a comparatively new organization in Muskogee, Okla., has been making a canvass through its section of the country for good roads. It has upward of a hundred members and has had a number of club runs this season. The accompanying illustration is that of a photograph taken at Wainwright, 2 miles southwest of Muskogee, on one of the club's recent runs. A dinner, on this run, was furnished by the citizens of Wainwright, who gave the club an old-fashioned chicken broil, which was thoroughly enjoyed.

The Motor Car Repair Shop

Hints for the Amateur

IN order to line up a set of wheels it first is necessary that they be perfectly true. To ascertain if the wheels are true, one has but to jack up the wheel so it may be turned freely, then hold a rule or stick or the like close to the rim of the wheel, in a fixed position, and turn slowly. The method is illustrated in Fig. 1. The wheel is jacked up and a block is placed beside it to steady the hand which holds the rule close to the rim of the wheel. As the wheel is revolved slowly the distance between the rim and the end of the rule is noted; if it remains the same throughout the revolution of the wheel, the wheel is true; if it varies, the wheel is untrue. If a wheel is not out more than a quarter of an inch it generally can be trued up very easily with a block of wood and a hammer. This, however, is possible only when the fault is due to the rim having been moved on the felloe. If the rim itself is bent, which is not often the case, it will have to be removed from the felloe, heated and then pounded back into shape while red hot, or a new rim fitted. The most simple method of truing up a wheel is shown at the left in Fig. 1. In this case it was found in testing the trueness of the wheel that at the point A the distance between the end of the rule and the rim was almost ¼ inch, and at the point B it almost touched the end of the rule. By taking a block of wood, holding it against the felloe F, just opposite the point A, and striking a single sharp, light blow with a hammer, as indicated, the rim R moved just the required distance in the direction of the arrows and assumed its original true position. Of course it always is not possible to get a wheel true with a single blow of the hammer, but the method nevertheless is very effective and simple to perform.

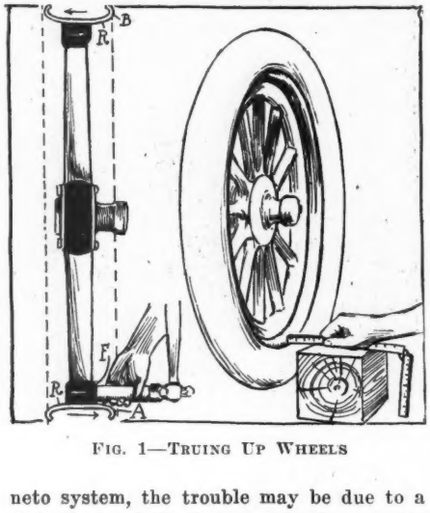


FIG. 1—TRUING UP WHEELS

Locating Magneto Faults

In locating faults in an ignition system of the dual type, where a magneto is employed, the first thing to do is to run the motor on both systems alternately to ascertain whether the fault is common to both or to only one of the sources of ignition current. If the motor runs well on one system, one is assured that the spark plugs, the secondary or high-tension cables, and everything else from the plugs to the distributer is in good order. Thus the search is simplified to that extent. If, for instance, the battery system is the one that gives trouble, either the battery needs recharging or replacement with a fresh set of cells, or the coil, the battery, the high-tension lead to the distributer, the switch or ground connections are loose, or the circuit-breaking device defective. If the fault is in the magneto system, the trouble may be due to a defective switch, the ground wire may be rubbing against some metal portion of the frame and causing occasional short-circuits, or there is something worn or out of adjustment in the circuit-breaking device. In Fig. 2 the rear end of the Bosch dual-ignition magneto is shown with the covers removed from the distributer D and the circuit-breaking device C. The lever B, the contact points B1 and the cam surfaces B2 comprise the circuit-breaking mechanism of the battery system; and the lever M, the contact points M1 and the two fiber rollers which are contained in the cover represent the magneto circuit-breaker. A section of the cover containing one of the rollers R and showing how it contacts with the end of the lever M is indicated in the sketch. Now, about the only causes of trouble possible in these devices is that the contact points M1 or B1 may become burnt or dirty; and the fiber rollers R, in remote cases, may become stuck fast to the pins P and wear, as indicated by the dotted line L, or the fiber cam-contact F after long service may become worn as indicated by the dotted line N, so that the platinum contact points M1 and B1 will not separate the required distance, which is about 1-32 inch. The Bosch company furnishes a little wrench with each magneto, or otherwise at a nominal cost of 5 or 10 cents, which has a gauge for facilitating the adjustment of the points of the circuit-breakers.

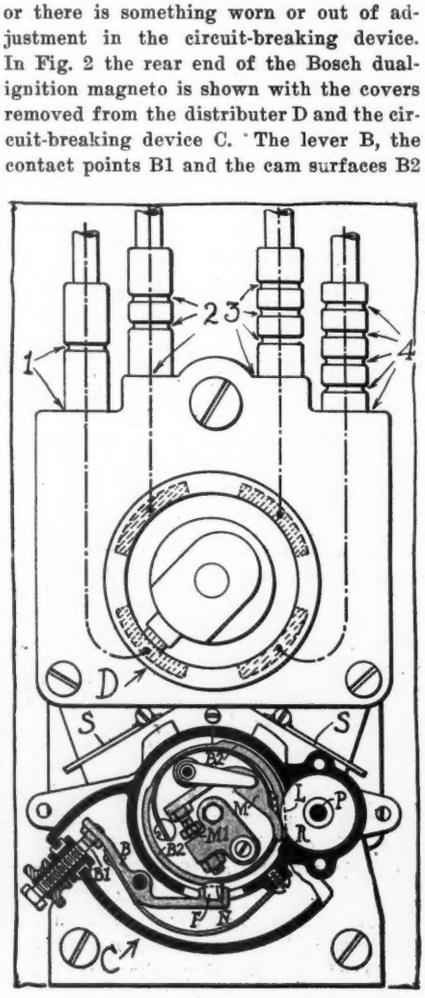


FIG. 2—BOSCH DUAL IGNITION MAGNETO

It might be well to take advantage of this illustration to initiate those who have yet to learn two important features of this apparatus. In order to eliminate the possibility of getting the cables mixed which lead from the top of the magneto, each terminal has one, two, three or four annular grooves cut into the insulated portion which indicates that the cable having one groove should go into the hole at the top of the distributer marked No. 1, the cable with two grooves on its insulated portion should fit into the hole marked No. 2, etc. It also is well to know that the magneto should be oiled with a few drops of oil about once a month, and that the oil should be introduced into the holes which are exposed by lifting the covers S, on either side of the magneto. It also might be well to add that everything on this apparatus that might require inspection is accessible without the use of any tool, and if you cannot get at what you suspect to be at fault without the use of a tool, take it for granted that you are liable to do more harm to the machine than good if you resort to mechanical force.

To Test Spark Plugs

The best way to test a spark plug of a multi-cylinder engine which is suspected of being defective is to take it out and exchange it with another plug from one of the other cylinders which you know is working properly. Generally this is about the last thing a person does, when it really ought to be the first. When a cylinder misses, short-circuit each of the plugs in turn with a screw driver while the motor is running, to locate the missfiring cylinder by the changes in sound.



Current Motor Car Patents

Fuel-Injector Motor—No. 960,057, dated May 31; to Thomas Turnbull, Jr., Pittsburg, Pa.—This patent covers a means of injecting fuel mixture into the cylinder of a two-cycle motor, comprising: As arranged in Fig. 1, a working cylinder C, with an exhaust port X, an air inlet port I, a spark-plug S, a fuel injector F, a piston P, connecting-rod R, crankshaft T, and an air-compressor attachment M, which is operated in connection with the fuel-injector. The injector F for feeding fuel into the cylinder has a fuel supply G, and a compressed-air supply A, and contains a means for regulating the amount of fuel injected into the cylinder. The valves in the injector and the air-compressor work automatically, and the air-compressor piston is operated through a connecting-rod from a cam on the crankshaft of the motor. In operation when the working piston is in the position shown in the illustration, it is at the end of an explosion stroke. The exhaust gases are passing out through the port X, and the cylinder is being scavenged by air which was compressed in the crank-case and is now entering at I. When the piston moves upward the air left in the cylinder is compressed, and as it nears the top center the piston of the air-compressor is forced upward and fuel is injected into the working cylinder, where a combustible mixture is immediately formed and ignited and the piston P forced downward.

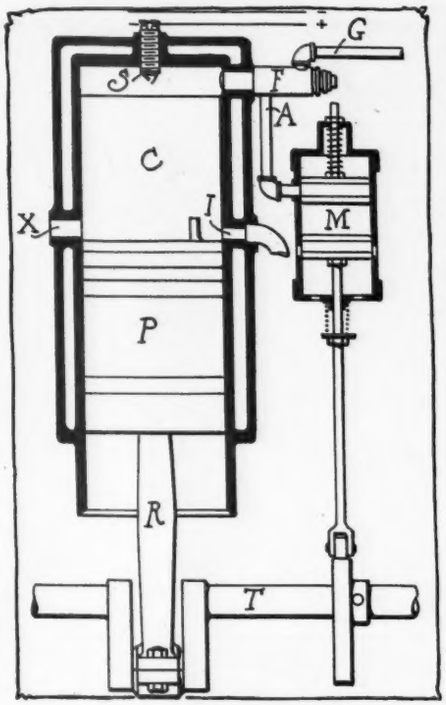


FIG. 1—FUEL-INJECTOR MOTOR

Spare Tire-Carrier—No. 962,730, dated June 28; to Charles F. Batt, New York, N. Y.—The spare tire-holder to which this patent relates comprises a frame F, Fig. 2, which consists of a vertical section supported in a bracket on the running-board, an adjustable horizontal section, and an inclined continuation of the horizontal section, the end of which is supported in a bracket attached to the side member of the main car frame. This frame has straps S, adapted to secure the tire to the frame and hold it in a rigid upright position, and the outfit includes an extra bracket B, secured to the running-board, which provides a means of locking the tire in place and holding it against theft. The bracket B, which is adapted to secure and lock the tire in position, comprises a flat base, a flexible metal band pivoted to one end of it, and a number of holes in the other end of the flexible band which engage a spring clasp on the other end of the base. The clasp has a pin in it which is adapted to engage one of the holes in the band, and means are provided for holding the pin in engagement and locking the band. The adjustable feature of the horizontal section of the frame serves to make a single size of irons adaptable to almost any size of car or tires.

Starting Apparatus—No. 962,653, dated June 28; to Vaughan Morrill, Tacoma, Wash.—This patent covers a device designed to fit into the cylinder plug of a motor, as illustrated in Fig 3, and comprises a means of facilitating motor starting by injecting a measured quantity of gasoline into the cylinder of a motor in a vaporized condition. The feature of the device is the construction of the valve V and its casing C. The valve V is operated from the driver's seat by suitable means attached to the lever L, and there is a passageway passing diametrically through it which forms the measuring receptacle of the gasoline and also a compressed air passage. The casing C has a gasoline and compressed-air inlet and a fuel and compression relief outlet. As shown in the illustration, the valve is in an inoperative position with the gasoline receptacle G registering with the gasoline inlet I. When the lever L is moved toward the right of the illustration until the receptacle, which is filled with gasoline, registers with the compressed-air inlet T at one end and with the duct D at the other, a spray of gasoline is forced into the valve chamber H and cylinder R of the motor. When the lever L is turned in an opposite direction, toward the left of the illustration, so the channel N in the valve V communicates with the duct D and the outlet O, the device relieves the compression in the cylinder in case there is compression therein.

Differential Mechanism in Wheel Hubs—No. 962,633, dated June 28; to Royal H. Gilbert, Lakewood, O.—This patent relates to a floating type axle construction in which the differential mechanism is incorporated in the clutches at the end of the transverse driveshafts that engage the wheel-hubs. As illustrated in Fig. 4, the devices consist of a set of ratchets which form suitable coupling devices between the driving axle and each of the driving wheels, which are so arranged that the drive from the axle may be equally distributed on both wheels in either direction when traveling on a straight course, but permitting either of the wheels to revolve faster than the driving axle, as is necessary in negotiating curves. Means are provided for automatically operating the coupling devices so the wheels are driven by the axle in the proper direction. This arrangement should simplify rear-axle construction.

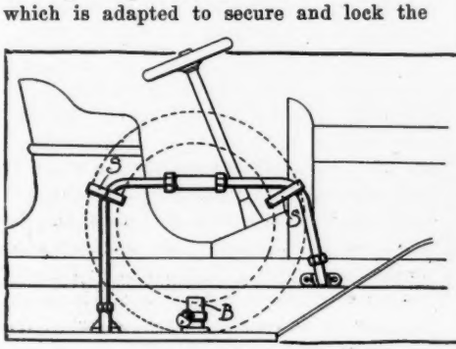


FIG. 2—ADJUSTABLE SPARE TIRE CARRIER

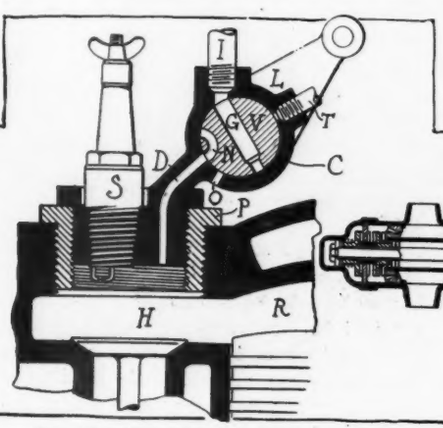


FIG. 3—APPARATUS TO ASSIST STARTING

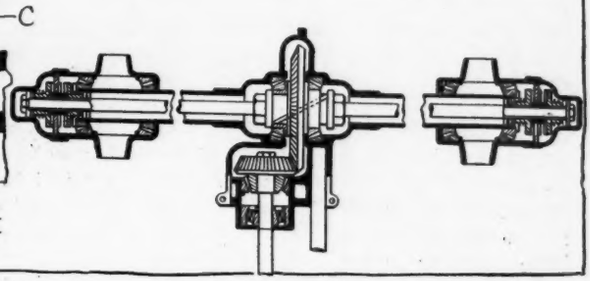


FIG. 4—DIFFERENTIAL IN WHEEL HUBS

Among the Makers and Dealers



FRANKLIN BRANCH MANAGERS IN SESSION AT SYRACUSE

1—G. H. Tisdale. 2—S. E. Ackerman. 3—S. G. Averell. 4—R. G. Vail. 5—J. S. Maddicks. 6—G. S. Rule. 7—E. N. Stimson. 8—J. A. Smith. 9—E. J. Quintal. 10—J. L. Wetherby. 11—R. G. Stewart. 12—Herman Bierhart. 13—E. W. Orr. 14—George Ostendorf. 15—C. H. Rockwell. 16—G. H. Williamson. 17—J. G. Troutman. 18—C. H. Calkins. 19—J. E. Hade. 20—J. G. Barker. 21—D. F. Garber. 22—J. N. Alsever. 23—H. C. Skinner. 24—R. W. Dean. 25—L. A. McKay. 26—B. E. Snyder. 27—C. E. Hull. 28—H. B. Webb. 29—J. E. Walker. 30—W. F. Reynolds. 31—R. H. LaPorte. 32—H. A. Guffey. 33—F. A. Babcock. 34—L. E Hoffman. 35—S. N. Lee. 36—J. E. Peters. 37—A. B. Pailca. 38—F. L. Thomas. 39—J. F. McLain. 40—W. S. Jewell. 41—A. B. Henley. 42—H. T. Boulden. 43—E. W. Nicholson. 44—O. C. Curtis. 45—G. E. Messer. 46—F. H. Sanders. 47—T. R. Lippard. 48—H. Hess. 49—Arthur Holmes.

ADAMS Is Chosen—T. E. Adams has been elected vice-president and treasuser of the Hol-Tan Co.

Premier Additions—The Premier Motor Mfg. Co., of Indianpolis, will erect additions to its plant that will give it about twice its present floor space. As a preliminary, the company purchased additional ground in Georgia street, opposite its present plant. On this will be erected a storage stock room, 50 by 100 feet, a motor test shop 50 by 130 feet and a road-testing department and repair shop 50 by 100 feet. A two-story wing will also be built to the building now used by the painters, upholsterers and final assemblers and a new machine shop 90 by 490 feet will be built.

Big Deal Pending?—H. A. Croxton, president, and F. M. Keeton, vice-president of the Croxton-Keeton Automobile Co., of Massillon, O., together with E. E. Smathers, of New York, and C. B. Shafer, of Pittsburg, recently were in Toledo in conference with President J. N. Willys, of the Willys-Overland Co., and Isaac Kinsey, president of the Kinsey Mfg. Co. It is understood that negotiations are pending for the sale of the large plant of the Massillon company to the Keeton Securities Co., and that the deal involves the removal of the plant from that city, in all probability to Toledo. The Croxton-Keeton company, which has been located at Massillon since its organization, employs about 300 men, but present plans contemplate its enlargement to from 500 to 600.

Big Garage in Indianapolis—Indianapolis will soon have its largest public garage, the recently organized Taxi Transfer Co., having leased the Washington skating rink at Washington and Pine streets, which will have a capacity of 200 cars. The company will also operate ten taxicabs and ten gasoline baggage delivery wagons. Those interested in the company are Francis Wallace, Clark E. Day and A. B. Howell, and the company has been incorporated with an authorized capitalization of $50,000.

Another Factory Expanding—The Diamond Automobile Co., of South Bend, Ind., formerly known as the Ricketts, has commenced the erection of an addition to its plant which will be 400 feet long by 50 feet wide, one story high with the exception of a portion of the front of the building, which will be two stories. The building will be constructed of white pressed brick, modern in every respect, with special attention being paid to the lighting of the plant. With the new addition the capacity of the plant will be increased to 500 machines per year with an increase in the employes to 150 men. The building will be rushed to completion, which it is expected will be in 60 or 90 days. The company has plans completed for the manufacture of a medium-priced car in addition to its six-cylinder machines. The present six-cylinder car for 1911 will be the same with some refinements that are now being considered by the company.

Goodrich Building Machine Shop—The B. F. Goodrich Co., of Akron, O., is building a new machine shop which will be three stories high and built around a hollow square. The length of the building, on Main street, is 185½ feet and extends back 260 feet. The width of each side of the square is 60 feet. It is being so constructed that two more stories can be added later on. On the first floor will be the maintenance department for the plant; and the company's garage, for tire-testing cars, for freight trucks, and for the machines owned by the officers and the members of the company. This garage will be 185 feet long, 60 feet wide and 17 feet high. On the second floor will be the machine shop to make the finer grade of molds; the carpenter shop; the tin shop; the paint shop, and the lockers and washrooms for all the employes engaged in these departments.

The third floor will be used for manufacturing purposes. All the floors will be connected by four high-speed freight elevators, running to the basement tunnel which will connect this building with the main part of the factory. The building material is reinforced concrete floors and columns with brick walls.

Putting Up Truck Plant—Following the announcement by the United States Motor Co. that a Detroit plant would be built for the making of Sampson trucks, instant action was taken and an immense building 1,050 by 150 feet is in process of construction near the plant of the Brush Runabout Co. A large force of men now is working on this main building. The foundations are laid and the footings are in. When the first 400 feet have been completed, which will be about August 10, General Manager Morris Grabowsky, of the Alden Sampson Mfg. Co., will move into that part of the building. The entire building will be completed September 15. Actual construction of Sampson commercial vehicles, however, is not awaiting the completion of this building, for other units of the plant are now being occupied. The testing shop already is finished and will be used temporarily as a machine shop. This building has fifteen pits for the convenience of the testers. The machine shop equipment is now being installed. The plant is absolutely fireproof and has a cement floor. For the building of bodies and the assembly of cars temporary tents have been erected. More than $125,000 have been expended for new machinery and equipment for the Pittsfield establishment, while the expansion of the plant includes a new building 170 by 70 feet, an additional story upon the present main building 170 by 85 feet, new forge, blacksmith and paint shop and testing room.

Elmore Changes Agents—The Elmore company has made a change in its agency representation in Chicago. Owen H. Fay, of 3831 Michigan avenue, who has for several years represented this line in connection with his motor livery, has found it necessary on account of the rapid growth of the livery and taxicab business to discontinue the agency, and the interests of the company and of Elmore owners will now be looked after by G. W. Goss, who is a brother of A. H. Goss, secretary of the Buick Motor Co. and of the General Motors Co. Mr. Goss has taken temporary office quarters at 1254 Michigan avenue, the New Southern hotel building.

Rush Rubber Plant—With building operations being pushed to the maximum, work on the new plant of the Kelly-Racine Rubber Co., of Racine, Wis., is progressing so rapidly that the superintendent of construction promises the building complete and ready for the installation of machinery September 1. The floor space, 190,000 square feet, will be completely occupied as soon after the builders turn over the main building to the officials of the company as possible. Of most approved and fireproof construction, the main structure of the plant has a frontage of 298 feet, with two wings, each with a depth of 251 feet, and it is of three stories and basement. To furnish a maximum of electric power for turning the wheels as well as for direct use in the art of manufacturing rubber, a great power plant has been provided, the building being 150 feet by 50 feet. In this will be installed one 750-horsepower Corliss engine and one 250-horsepower auxiliary Corliss engine. When in active operation the Kelly-Racine rubber plant will employ 800 skilled workmen in its plant.

Nuckols Columbia President—At a meeting of the directors of the Columbia Motor Car Co., held in New York, Henry W. Nuckols was elected president of the company. Mr. Nuckols has been, since the organization of the Columbia Motor Car Co., its vice-president and general manager, and he now succeeds Herbert Lloyd, of Philadelphia. Mr. Nuckols has been identified with the manufacture of Columbia motor cars for 5 years. Previous to the formation of the Columbia Motor Car Co. he was one of the two receivers.

Agent Starts Suit—Lewis H. Fawkes, of Minneapolis, Minn., has filed suit in the circuit court at Indianapolis against the American Motor Car Sales Co. asking $100,000 damages for alleged breach of contract. Fawkes states that he was allotted parts of Minnesota, North Dakota, South Dakota, Wisconsin and Montana as selling territory for the Overland and was to be furnished 500 cars within the year ending August 31, but that only twenty-three cars have been shipped and other agencies have been opened in the territory. The Overland Automobile Co. states that Fawkes did not develop his territory properly.



REPRESENTATIVES OF UNITED STATES MOTOR CO. AT RECENT SESSION

4—M. Stone, Pittsfield, Mass., sales manager Alden-Sampson Truck Co. 5—J. A. Newby, New Castle, Ind. 6—John A. Moore, New York, traffic manager United States Motor Co. 8—Webb Jay, Chicago. 9—M. A. Sackstedter, Dallas, Texas. 10—C. G. Blaisdell, Cleveland, Ohio. 11—A. I. McLeod, Detroit, Mich., district manager Maxwell-Briscoe Motor Co. 12—F. R. Corbet, Columbus, O. 13—N. H. MacIntire, Toledo, O. 16—J. M. Austin, Atlanta, Ga., district manager Maxwell-Briscoe Motor Co. 17—M. Monroe, Buffalo, N. Y. 18—W. H. Hadley, Albany, N. Y. 19—F. J. Linz, San Francisco, Cal., district manager Maxwell-Briscoe Motor Co. 20—F. J. Tyler, Boston, Mass., district manager Maxwell-Briscoe Motor Co. 21—Frank A. Rielly, Chicago. 22—Frank Tate, St. Louis, Mo. 23—H. N. Duncan, New York. 24—M. D. MacNab, Chicago. 25—W. F. Smith, Philadelphia, Pa., district manager Maxwell-Briscoe Motor Co. 26—F. D. Dorman, New York, vice president Maxwell-Briscoe Motor Co. 27—Frank Briscoe, Detroit, Mich., president Brush Motor Co. 28—H. W. Nuckols, Hartford, Conn., vice-president Columbia Motor Car Co. 29—Mr. Jamieson, Dayton, O., sales manager Stoddard-Dayton. 30—Benjamin Briscoe, New York, president United States Motor Co. 31—J. D. Maxwell, New York, president Maxwell-Briscoe Motor Co. 32—A. B. Barkman, New York, district manager Maxwell-Briscoe Motor Co. 33—F. E. Dayton, Hartford, Conn., sales manager Columbia Motor Car Co. 34—A. M. Pardee, New York. 35—Maurice Grabowsky, Detroit, Mich. 36—George R. Holden, Chicago. 37—J. S. Conwell, Los Angeles, Cal. 38—J. I. Handley, New York, district manager Maxwell-Briscoe Motor Co. 39—Mr. Harris, Detroit, Mich. 40—Mr. Horton, Syracuse, N. Y. 41—Horace De Leber, New York, vice president United States Motor Co. 42—Mr. Evans, Hartford, Conn. 43—L. H. Doty, Omaha, Neb. 44—Berry Rockwell, New York. 45—Charles Blatz, Sandusky, Ohio.

Brief Business

BALTIMORE, MD.—The Shaab Automobile Co. has taken on the Matheson.

Washington, D. C.—The Halladay agency has been placed with the LeDroit Auto Co.

New York—The Daimler Import Co. has been incorporated with a capital of $300,000.

Marshfield, Wis.—Lang & Sharman are building a large garage adjoining their foundry.

Cleveland, O.—W. H. Havens has been appointed sales manager of the Cleveland Anhut agency.

Washington, D. C.—M. T. Pollock, the Oldsmobile agent, has opened a new salesroom at 1018 Connecticut avenue, N. W.

Cleveland, O.—The Auto Shop Co. moved to its new salesrooms last Saturday, at Euclid avenue and East Twentieth street.

Reedsburg, Wis.—Paul Fieber, of Milwaukee, Wis., has opened a garage and repair shop in the Horkan building at Reedsburg.

Washington, D. C.—L. C. Ferrall & Co. have opened a salesroom at 1422 Fourteenth street, N. W., and will handle the Everitt.

Boston, Mass.—W. S. Marsh, Boston agent for the M. M. motor cycles, has branched out, having taken on the Paige-Detroit for Boston and vicinity.

Boston, Mass.—The Easton Machine Co. has taken the salesrooms made vacant on Hereford street, Boston, by the retirement of the Hol-Tan company, as headquarters for the Morse car, made at Easton, Mass.

Racine, Wis.—The Mitchell-Lewis Motor Car Co., of Racine, Wis., is forced to use every boat line touching the port as carriers for its motor cars, the railways already being crowded by the shipments. Last week five cars for Illinois agents were shipped to Chicago on a steamer to assure immediate delivery.

Cleveland, O.—The Kissel Kar Co., of Ohio, has been formed in Cleveland to handle the Kissel car in this territory.

Pittsburg, Pa.—Charles T. Bowdoin has secured the Pittsburg agency for the Baker electric car and is located in the Morewood garage in Centre avenue.

Elyria, O.—The Halldow Mfg. Co. has been incorporated to manufacture and sell electric horns of all kinds by E. L. Smallwood, M. J. Fummington, F. E. Benjamin, A. R. Chamfrey and John Halldow.

Portland, Ore.—F. G. Fenton, for the past 5 years with the Winton factory at Cleveland, O., has been engaged by the Northwest Buick Co., of Portland, to take charge of the accessory department.

Milwaukee, Wis.—The Cream City Trimming Co. now is occupying the new quarters at 615-617 Market street, in addition to the old shops at 67-73 Juneau avenue. The new building is 50 by 100 feet in dimensions, and thirty men are employed.

Mansfield, O.—The Forth Motor Car Co. has been incorporated with a capital of $200,000 to manufacture and sell all kinds of motor cars. The incorporators are C. S. Ashbrook, W. M. Hahn, Charles Hoffman, Samuel J. Caldwell and W. H. Shyrlock.

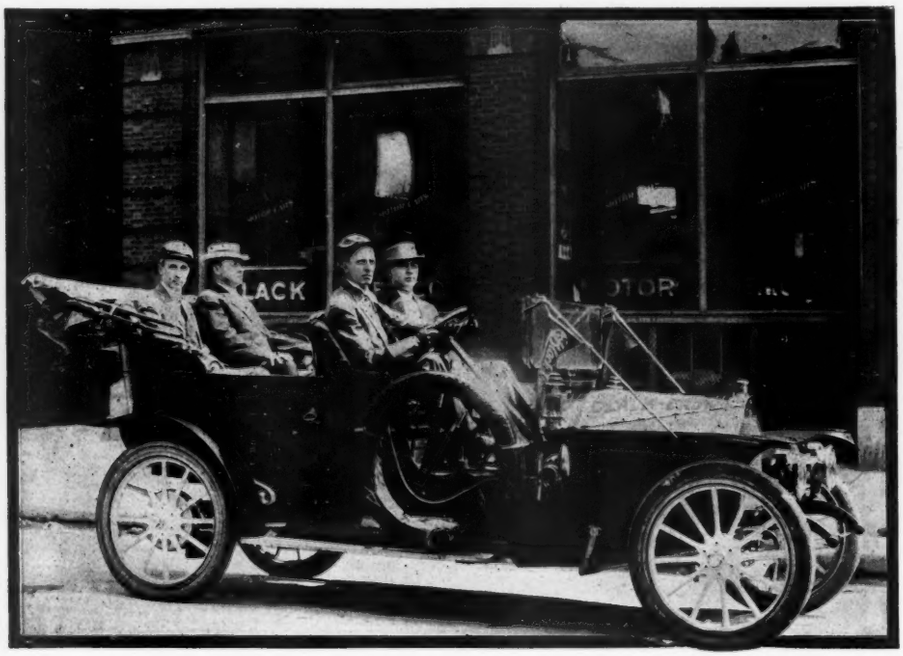
Oshkosh, Wis.—The McKone Motor and Tire Repair Co., of Oshkosh, Wis., recently incorporated for $10,000 by L. J. McKone, H. W. Ziebell and R. C. Johnson, has purchased the assets of the Wisconsin Tire Repair Co., of Oshkosh, against which a petition in bankruptcy was filed several weeks ago.

Indianapolis, Ind.—The Overland Automobile Co. is to build an addition to its plant at the Big Four railroad and Fifteenth street, to cost $15,000. This plant formerly was owned by the Marion Automobile Co.

Syracuse, N. Y.—John H. Valentine, formerly manager of the Amos-Peirce Automobile Co., has resigned and will enter the business for himself. He has secured the Syracuse agency for the Chalmers cars. For the present he is with C. Arthur Benjamin, at 410 West Onondaga street.

Milwaukee, Wis.—The Brodesser Motor Truck Co. has completed the formality of changing its place of business to Juneau, Wis., by filing amendments to its articles of incorporation to this effect. Work on the new plant at Juneau is being rushed, and it is possible that occupancy will be given on December 1 instead of January 1.

Indianapolis, Ind.—A new sales concern has been organized in Indianapolis under the name of the Auto Sales Co., which has taken the agencies for the Fuller and Cutting. The company has been incorporated with an authorized capitalization of $25,000. Douglas Case, for many years proprietor of a horse livery stable, is president; M. G. Beckner, formerly of the Indiana Automobile and Carriage Co., is vice-president and manager, and Cass Conna-



CHICAGO SALES HEADQUARTERS OF BLACK CROW MAKERS

Recent Incorporations

Canton, O.—Diebold Motor Co.; capital $20,000; incorporators R. J. Diebold and others.

Mansfield, O.—Forth Motor Car Co.; capital $200,000; incorporators C. S. Ashbrook and others.

Oklahoma City, Okla.—Farmers Motor Wagon and Plow Co.; capital $10,000; directors Colfax Moulton, D. East of Oklahoma City and F. B. Johnson of Hays City, Kan.

Cleveland, O.—Cleveland Motor Truck Co.; capital stock $250,000; incorporators W. B. Stewart and others.

New York—Lovelace Aeroplane and Motor Co.; capital $25,000; to manufacture and sell motors, engines, self-propelling vehicles, etc.; incorporators H. Amerman, F. W. Marshall, New York city; E. M. Morrison, Brooklyn.

Rochester, N. Y.—Dalzell Motor Car Co.; capital $10,000; incorporated directors Andrew H. Dalzell, Bradley W. Fenn, Frank P. Van Hoesen, James T. Miller, Albert H. Olmstead, all of Rochester.

Rochester, N. Y.—Strong-Crittenden Co.; capital $20,000; to deal in motor cars and accessories; directors Henry G. Strong, Austin F. Crittenden, Henry D. Shedd, all of Rochester.

Newark, N. J.—Wallace De Wilde Co.; capital $10,000; to manufacture and deal in motor cars and their parts; incorporators Henry A. O'Brien, Herbert De Wilde of New York, John B. Wallace of Jersey City.

Newark, N. J.—Simplex Sales Co.; capital $10,000; to manufacture motor cars, motor boats, etc.; incorporators George B. Riley, Jersey City, N. J.; Moses Ritter, Rahway, N. J.; E. R. Holmes, Newark, N. J.

Jersey City, N. J.—Independent Owners' Garage; capital $300,000; to operate garages; incorporators E. L. Young, E. I. Edwards, E. F. Smith, Jersey City.

Chicago—Auto Renewal Co.; capital $2,500; to deal in and manufacture motor cars and parts of same; incorporators James S. McClellan, Leo Klein, Jerome J. Cermak.

Announcements

way, an attorney, is secretary. Mr. Beckner has more recently been engaged in the motor car business.

Washington, D. C.—Stanley Horner has been given the agency for the Cole. He was formerly connected with the Wilson Co., with which he has secured office room.

Boston, Mass.—An agency has been opened in Boston for the McIntyre truck. E. P. Blake, New England distributor of the Jackson and Fuller cars, has taken it on.

Columbus, O.—The Early Motor Car Co., of Columbus, has taken the central Ohio agency for the Chase motor truck. The territory covered consists of about twenty-five counties in the central part of the state.

Madison, Wis.—The King & Walker Co., of Madison, Wis., is succeeded by a corporation, the Wisconsin Foundry and Machine Co., capitalized at $60,000. The articles state that one of the objects is the repair and overhauling of motor vehicles, etc., by the company.

Boston, Mass.—The Boston branch of the Winton company will be moved in December from the present quarters on Berkley street to a new building being erected on Commonwealth avenue, in the vicnity of the Packard, Buick, Peerless and Studebaker buildings. The new building willl hold three motor companies, and C. F. Whitney with the Stoddard-Dayton and Alco cars will be another occupant. The Winton will occupy the center of the building.

Cleveland, O.—The Parry car will be sold in Cleveland after August 1. The Auto Sales Co. will have the agency.

Pittsburg, Pa.—Kaufmann Brothers have secured the agency for the Pittsburg territory for the Imperial tires made by the McGraw Tire Rubber Co., of East Palestine, O.

Milwaukee, Wis.—The Badger Auto Tire Repair Co. has moved to larger quarters at 132 Oneida street. V. A. Massee is manager. The company will handle the Kelly-Springfield tires in this territory.

New York—Louis C. Marburg, secretary and treasurer of Marburg Brothers, sailed on the Celtic to attend the meeting of the Society of Mechanical Engineers at Birmingham, England. He is going from there to the continent to attend to business matters.

Boston, Mass.—R. R. Ross has taken over the management of the Boston branch of the Fiat, while Simeon R. Baker, whom he succeeded, has moved down to the New England Motor Co., where he is now assistant sales manager, handling the Parry and Rainier cars.

Edgeworth, Pa.—The Edgeworth Machine Co. lost its garage by fire July 8. The loss is estimated at about $40,000, partly covered by insurance. Eight private cars were also burned. The company already has had plans prepared for a new two-story garage, fireproof, 172 by 150 feet, at Broad and Centennial streets, Sewickley, Pa.

Washington, D. C.—Charles E. Myers, the Elmore agent, has opened a new salesroom at 1423 L street, N. W.

Cleveland, O.—The Croxton-Keeton car will be represented in Cleveland with salesrooms at 5300 Euclid avenue.

Sheboygan, Wis.—H. E. Smith, proprietor of the Erie garage, has been appointed district agent for the Matheson.

Syracuse, N. Y.—Theodore Young, formerly with the H. H. Franklin Mfg. Co., has taken the Syracuse agency for the Peerless car, succeeding the Genesee Motor Car Co.

Boston, Mass.—A large lot of land, fronting on Day street, has been sold by Edward J. Welsh, of Cambridge, to Freeman B. Horsman and Thomas I. Kingston, who will build a cement garage thereon. The lot contains 12,000 square feet.

Cleveland, O.—The Hupp Motor Sales Co. has been incorporated with an authorized capital of $15,000 to conduct a sales agency and repair business. The incorporators are James A. Farrell, William J. Coughlin, Thomas Coughlin, A. C. Ward and W. J. Dowley.

Columbus, O.—The J. R. Whitney Auto Sales Co., of Cleveland, has been incorporated with an authorized capital of $10,000, to operate a sales agency and garage. The incorporators were J. R. Whitney, W. C. Sell, F. Irene Burke, C. J. Burke and William H. Kemmerling.

Downing, Wis.—The decision of the Starr Automobile Co., of Minneapolis, Minn., to build a large factory at Downing has resulted in great civic and commercial activity in the little city. One of the first enterprises is the establishment of a lively weekly newspaper.

Recent Incorporations

Chicago—Junkers-Burdick Co.; capital $25,000; to manufacture cars and accessories; incorporators Otto Junkers, Winthrop Burdick, Geo. J. Meier.

Chicago—Chicago Auto Clock Co.; capital $50,000; to manufacture motor clocks; incorporators Adolph L. Benner, William M. Lawton, Otto G. Knecht, Adolph L. Benner, Chicago.

Chicago—Wilcox Motor Car Co.; capital $12,000; to deal in vehicles; incorporators Arthur L. Ballas, Fred J. Wegg, George J. Meier.

Springfield, Mass.—Rayfield Motor Car Co.; capital $150,000; to manufacture motor cars and accessories; incorporators J. F. Miller, E. E. Staley, Burke Vancil.

Leominster, Mass.—Leominster Garage and Auto Co.; capital $5,000; incorporators: President, Leo. M. Stutz; treasurer, Morris Falk.

Malden, Mass.—Tebbets Garage and Mfg. Co.; capital $25,000; incorporators Frederick P. Miller, Malden, and Carroll E. Tebbetts, Malden.

Worcester, Mass.—Alsten & Boulding Co.; capital $5,000; to make tires; incorporators John A. Alsten, Horatio C. Goulding, both of Worcester, and Willis E. Sibley, Worcester.

Newark, N. J.—Commercial Maintenance and Motor Co.; capital $100,000; to operate motor cars for rent and hire and repair automobiles; incorporators Robert O'Gorman, Samuel A. Halsey, George D. O'Gorman.

Asbury Park, N. J.—Aero and Motor Club of Asbury Park; capital $25,000; to conduct aviation and motoring exhibitions; incorporators George W. Pittenger, Alonzo R. Parsons and James G. Warner.

Philadelphia, Pa.—Philadelphia Regal Auto Co.; capital $10,000; incorporator Robert M. McCormick.

Victoria, Tex.—Overland Garage Co.; capital $3,000; incorporators John J. Welder, Jr., Robert H. Welder and Paul Plummer.



NEW SALESROOM OF MAXWELL-BRISCOE WASHINGTON CO., WASHINGTON, D. C.



Legal Lights and Side Lights

EXTRA TAGS NECESSARY

BY AN opinion rendered by Attorney General Denman, of Ohio, it is held that all motor cars used in Ohio in the taxicab or renting business must be provided with a separate set of number plates. Inquiries as to whether certificates of registration and number plates issued to manufacturers and dealers under the provisions of the state law may be used by the manufacturer or dealer in conducting a taxicab business were received by the state motor car department. It is said that a number of manufacturers and dealers used their duplicate tags for that purpose, which is stopped by the recent decision.

Truce Is Declared

Contrary to expectations, Governor Crothers, of Maryland, has completed reciprocal relations with Governor Stuart, of Pennsylvania, whereby a Maryland licensee will be allowed the privilege of touring in Pennsylvania 10 days. Under the arrangement, Pennsylvania motorists have the same courtesy extended to them.

Olive Branch Held Out

What is regarded by those who are in touch with the motor situation as the first step to bring about better relations between the states in the east as a result of their laws, antagonistic to the motorists of neighboring states, was the visit to Boston of Commissioner J. B. R. Smith, of the motor vehicle department of the state of New Jersey, and his appointing Francis R. Huturbis, Jr., as special agent for New England to grant licenses to motorists in Boston who wish to travel through New Jersey. Mr. Hurtubis outlined the situation as it exists in Massachusetts regarding New Jersey, and he explained fully to Mr. Smith the feeling that has become widespread relative to the laws in Jersey bearing upon motorists passing through that state. Much of what Mr. Hurtubis told the commissioner was a great surprise to him, and he hardly could believe it. That Massachusetts is in earnest in enforcing the law relative to New Jersey motorists coming into Massachusetts was shown in a rather forceful way at Springfield during the week. A New Jersey physician had occasion to visit Springfield in his motor car to carry a patient back to that state. All unsuspectingly he motored into the city, only to find himself arrested, and the next day he was found guilty of breaking the law and fined. That there will be a lot of similar cases before the summer ends there is little doubt.

QUESTION MARYLAND LAW

Washington motorists have threatened to attack the Maryland law in the courts, declaring it to be unconstitutional. The Maryland law is attacked on the ground that it is an unlawful interference on the part of a state with persons and instrumentalities engaged in commerce and intercourse between states of the union, which cannot be sustained on the theory that it is a reasonable and warrantable exercise of the police power of the state of Maryland. It is further considered untenable on the ground that it is the right of every citizen of the United States to pass through or into any state without being subject to any tax or burden for the privilege of doing so. Finally, it is claimed that it discriminates between residents of the district and residents of the states and other federal districts in favor of the latter in denying absolutely the right on the part of the residents of the district to motor even for a moment within the state limits without paying a heavy license and registration fee, whereas it purports to grant to other citizens the privilege of doing so for two periods during each year without exacting such fees. Washington motorists declare that since the Maryland law went into effect July 1 they have paid into the Maryland treasury between $8,000 and $10,000, and that as the tax is an annual one, the burden will be felt every year by owners of cars.



"In Unfamiliar England"

Thomas D. Murphy has recorded his impressions of a second tour by motor car through the unfrequented nooks and out-of-the-way places of rural England in a 390-page, cloth covered volume entitled "In Unfamiliar England," published by L. C. Page & Co., Boston. These random wanderings, as the author calls them, began among the nooks about London, then northward to Cambridge, Coventry, and on to the coast through the Washington country. Returning to Coventry the tourist proceeded southward to Exeter, thence west through the Dartmoor forest up into the Welch border, touring through South Wales; then north again into the Yorkshire country and on up to into the Scottish moors. Wending his way back to York, southern England and the Isle of Wight was the destination of the wanderers. Going back to London and after a 3 days' hurried trip west to Dover, where passage was taken to Dublin, came a spin around the Emerald isle,—and, then, London again. This summary of a long journey is told in narrative style, interspersed with short chronicles of the historic towns passed through and buildings visited. There are sixteen color plates and forty-eight duogravures of English scenery and historical buildings. In closing this second travel book the author pays the following fine tribute to his motor car—the modern method of travel on the open road: "Travel-stained but unwearied, the tried and trusty companion of our pilgrimage stands before our London hotel. What a splendid means to a splendid end the motor has become! In two summers we have seen more of Britain than one might find it practicable to see in years under old conditions."

"Engineer's Reference Book"

The third edition of "The Mechanical Engineer's Reference Book," by Henry Harrison Suplee, has been revised and amplified, with four-score or more pages of new matter added. The aim of the book has been to present the most reliable rules and formulæ and reference data for mechanical engineers, and in 922 pages it gives well-arranged and concise data relative to the theories of mechanics, properties of materials, machine design, electricity and steam engineering. Conversion tables in both metric and British units are furnished. A most complete index and 400 or more illustrations add greatly to the value of this reference book. The publisher is J. B. Lippincott Co., Philadelphia.

"Chateaux of Old Burgundy"

The old historic castles, palaces, abbeys, fortresses, and barbican gates of Burgundy and its border provinces are the subject of an interesting volume, 324 pages in length, by Francis Miltoun, which he calls "Castles and Chateaux of Old Burgundy," and published by L. C. Page & Co., Boston. The little province of Burgundy, which ever has been the land of prosperity and opulence, was closely allied with its political neighbors, and as a result of this the Burgundian spirit was far reaching, manifesting itself not only in the castles and palaces of the nobility, but in the manner and customs of the people. This love of architectural splendor was emulated far and wide, though the style of architecture was more or less affected by geographical location and climatic conditions. So, today, this section of France from an architectural standpoint is most interesting to the traveler because of the feudal monuments and chateaux that still stand attesting the beautiful and regal architectural splendor of ancient days. The book is replete with illustrations by Blanche McManus reproduced from paintings which were made on the spot by the tourists.